

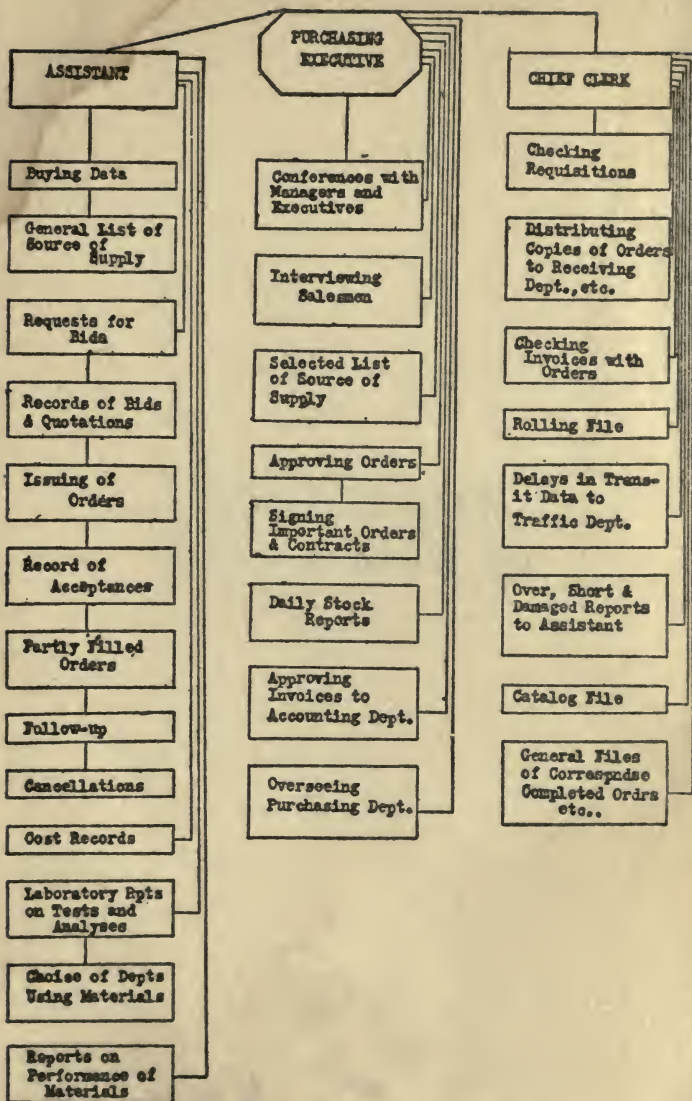




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**THE SCIENCE  
OF PURCHASING**



ORGANIZATION CHART FOR PURCHASING DEPARTMENT

# THE SCIENCE OF PURCHASING

BY  
HELEN HYSELL

..

WITH AN INTRODUCTION BY  
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TICS," "THE GREAT GAME OF BUSINESS," ETC.



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## INTRODUCTION

Hundreds of books are extant on selling and salesmanship, telling how a buyer may be won, but there were, until this book was completed, only *two* books on *buying*, which is the other side of the story of the sale. In fact, writers have complained that so much high class effort has been given to the wiles of persuading people to buy that the buyers "have no chance" against the expert technique of salesmen and sales managers.

This book is the first recognition of the fact that the science of purchasing has also been keeping pace with the science of selling. The modern purchasing agent is a more important man by far than he was in older days when purchasing agents were likely to be more of the nature of "rubber stamps," or "buffers," or were bargainers for an extra penny of advantage. A purchasing agent of the modern breed is a creative thinker and planner and a student of many elements of business. Very justifiably he now regards his work as a profession, because he now applies professional standards and methods to his task. The ethics of purchasing is now on a most commendably high plane in all but a very few fields, and the fact that purchasing agents are leading in a fight against commercial bribery is



in itself an augury of the new level of pride and efficiency and group consciousness which exists.

For years the seller of goods suffered more than any other class from the backwardness of the purchasing agent. He was often an obstruction to his firm's progress, and not as now a channel and live contact point for securing for his firm the best and latest merchandise. The coming of more science in selling has been a boon to the seller, because he can get a hearing for his facts. The seller and the buyer can meet on the common platform of *service* as never before, and the competition of the inferior article is not now so formidable as it was when sheer personality and polite graft muddied the waters. The keener, more highly trained point of view in buying means, it is true, a higher type of salesmanship and a challenge to service and sound merchandising, but it is welcomed nevertheless.

Miss Hysell has written a book which in my opinion splendidly and practically reflects the new developments in purchasing. Her volume is complete in all aspects and has the right perspective—besides being a concrete manual for business houses and students of purchasing. It will, I predict, become the standard volume on the subject, and greatly increase the practice of modern purchasing principles—much to the benefit of business as a whole.

J. GEORGE FREDERICK



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COLLEGE

# THE SCIENCE OF PURCHASING

## CHAPTER I

### PERSONAL QUALIFICATIONS FOR SUCCESSFUL PURCHASE MANAGEMENT

**Purchasing as a Vital Element in Business Success.**—The purchasing executive makes a most important contribution to the success of modern business. (A dollar saved in wise and careful buying is considered of more value than a dollar profit, because it is a dollar earned over and over again.) The entire structure of cost and profit percentage rests upon a foundation of right purchase and often competitive advantage and superiority in quality is based upon purchasing policy and purchasing alertness. Bankruptcy, failure to earn or pay dividends, may be, and frequently is, chargeable either to incomplete or inadequate understanding of the function of purchasing.

In past years it was the practice to take too narrow a view of purchasing. The purchasing agent or manager was popularly supposed to be an individual who warded off salesmen and played one seller against another in order to get a low price. Unfortunately, there was a large measure of truth in this assumption. A few years ago, the purchasing executive was without vision or broad training and

usually without authority. In consequence, it became a byword that purchasing executives were merely "figure-heads"—the real purchasing authority being vested in others. Sellers, as a result, went higher up whenever possible.

This understanding of the function of purchasing held within the organization even more than without. The purchasing executive was looked upon as an order writer and, as such, was ignored by the heads of other departments. Executive conferences almost never included him, and important matters pertaining to expansion and curtailment of business activities were decided upon without consulting the purchasing executive. Yet, as an order writer, he was expected to purchase materials and supplies in quality and quantity desired, under advantageous conditions, and have them on hand at the time specified. Frequently, his only warning was the receipt of a requisition from the manufacturing or stores division, in case of increased production; or a cancellation, in case of curtailment.

Such a situation was anomalous and unsound and is being rapidly changed. The modern business organization demands a thorough coördination of all executive functions. The aims, plans and policies of the entire organization are discussed and decided upon through the coöperative efforts of all executives. A broad selling campaign is not inaugurated until the salesmanager, the advertising manager, the head of the manufacturing or production department, the head accountant and the pur-



chasing executive have considered the project from all its angles and have made sure that each step is clearly outlined, practical and within the possibilities.

Thus, the accounting department is cognizant of the coming of an unusual expenditure; the manufacturing department is enabled to prepare for an increase in production; the advertising and selling departments may perfect the details of their campaign, and the purchasing executive may secure bids on primary materials in advance of actual need. Only by this method can satisfactory results be obtained. [Far from being a mere clerk who buys when some one tells him to, or a trained person who heads an expert bureau that advises executives after they have decided to buy, the modern purchaser is a coördinate executive who has the power of direct action in consonance with the actions of other executives who meet in conference.]

The mature technic of purchasing management is, therefore, now developing and the special requirements of a purchasing executive are becoming definitely known in a way similar to the knowledge of a sales or advertising manager.

**The Personal Qualities Essential in Purchasing Managers.**—In view of the special demands made upon a purchasing manager and the selling pressure brought to bear upon him, a certain definite set of personal qualities seems to be required. He must have the correct temperament for his job of buying, just as distinctly as the salesmanager must have the

correct temperament for selling. Popularly, the seller is presumed to require an "optimistic" temperament, while the buyer is presumed to require a "pessimistic" temperament. This is not precisely the case, but has, of course, its elements of truth. Broadly speaking, a purchasing manager may be said to require the following principal personal elements:

1. Natural aptitude.
2. Foresight.
3. Mental alertness.
4. Power of analysis.
5. Self-reliance.
6. Common sense.
7. Direct action.

These qualities are separately discussed in the following paragraphs.

*Natural Aptitude.*—As in other professions requiring natural aptitude, together with specialized training, so in purchasing, some men are naturally better equipped than others to make a profession of studying buying needs and doing the buying. It is probably true that some temperaments are "natural born" buying temperaments and others "natural born" selling temperaments. As the boy who shows a distinct preference for things mechanical, may, if he follows the urge from within, become a specialist in some one of the engineering professions; so possibly, will the child who, without instruction or previous experience, manages to drive a good bargain when trading a handful of marbles

for a jackknife, become a successful purchase manager, providing his natural ability to size up values is developed.

All other things being equal, it is safe to say that the ability to become a successful purchasing executive is primarily instinctive. But, without acquired knowledge, this instinct is likely to prove a hindrance rather than a help. Buyers holding the most responsible positions in the world of business to-day are those men who get results through the broad and comprehensive knowledge acquired through study—knowledge that has become so deeply rooted that the man who has made an especially “good buy,” when asked how he happened to do it, may truthfully say, “I had a hunch.” But this same “hunch,” if analyzed, would be found to have been based upon an economic fact absorbed and become a part of the very mind of the man.

Buying instinct, therefore, resolves itself into the inherent propensity for bargaining plus a broad and comprehensive knowledge of markets, materials, methods and men. The purchase executive must be a trader by instinct, knowing selling methods thoroughly; but from the obverse side, his instinct must keep him aware of all the *finesse* of selling as well the *finesse* of buying.

*Foresight.*—A successful purchasing executive must be able to foresee conditions that, very often, do not appear at the time of placing his order. He must take action in reference to the future, these actions being based upon certain conditions that

have held in the past. With many concerns the purchase budget is prepared months in advance of the date of requirement, in which case the purchase manager must take past price variations as a premise and, by ascertaining the basic principles underlying these variations, anticipate the market trend between the time the order is placed and the date of delivery or resale. In order to do this successfully he must possess the power of foreseeing, augmented by perpetual study of business conditions past and present, specialized knowledge of the commodities in which he is dealing and complete records of requirements of the concern for which he is making the purchase.

The buyer's system of stock keeping will enable him to anticipate the needs of his organization and to gain absolute information concerning the maximum and minimum amount of each material on hand. Possessing foresight, he will be able to load up his firm, even beyond the maximum point or, when it seems advisable, to buy in small quantities from week to week, knowing that a change in the market is imminent. He must be able to understand the difference between foresight buying and sheer speculation, and how to relate the company's financial position to the purchasing plan.

*Mental Alertness.*—In a peculiar degree a purchasing executive must be alert. A great number of highly trained sales and advertising forces are pointed toward him and their success is measured by what effect they can produce upon him or what



decisions they can inveigle him into making. The whole gamut of persuasion, argument, personality, sophistry, allurements and manipulation are operated upon him by those whose lives are given to the perfecting of these arts and who probably receive higher salaries than the purchasing executive as a reward for their skill. The one shield with which the purchasing executive has to meet such pressure is alertness, which means simply that he clearly understands every situation arising or representation made. This need is increased through the necessity of carefully watching the multiplex features of the market, anticipating a rise or fall in the price of commodities, and watching the general economic drift.

To foresee, however, for instance, the result of progress on the part of a competitor or of a selling concern; to realize the effect of deterioration either in the selling concern or in the commodity in which it deals, requires alert attention to the smallest indication. To be prepared to take advantage of profitable changes in the markets, the purchasing executive must be a student of world economics as well as of history of business conditions. He must be ever on the alert for means whereby he may negotiate a saving for his concern by purchasing exactly the right quantity at precisely the right time in order to secure the best possible price. A sluggish mind, a slow-perceptive intelligence, and after-witted temperament, or a dulled edge of awareness to what is going on is a severe drag upon success in purchasing.

*Power of Analysis.*—Considering the fact that the purchase manager must be a specialist along lines highly diversified in nature, the ability to resolve people and things into their component parts, to go beneath the surface and discover the underlying reasons for each point that is brought to his attention, is essential. This power of analysis enables the purchaser to discover, without being told, many facts that would otherwise remain obscure to him and would tend to lessen his value to his organization.

By studying and analyzing the market the wide-awake buyer may learn the precise reasons for the rise and fall in prices. By studying and analyzing the salesman with whom he comes in contact he may determine to how great an extent each one is drawing upon his imagination for the supposed facts he is stating. And by studying and analyzing the members of his own organization he may arrive at the basic characteristics of these men and thus uncover the different types and learn how best to handle them tactfully, and go contrary, sometimes, to their purchase recommendations in the interest of the firm. Thus, when he is confronted with a requisition for some new and expensive article, he must determine whether it is a luxury or an economy; and to determine this, he must technically analyze the situation, and also the man making the requisition. He is far more likely to send the order through if he is satisfied that the requisitor is reliable and himself capable of analyzing the situation. If he

knows that the man is inclined to desire a purchase without proper consideration of all phases of the matter, he must follow a different procedure. The opportunity for analysis of purchase requirements is, of course, unending, and a man without a very marked ability of practical analysis is a hopeless waster in a position of purchasing executive. Both the men in his own firm and the sellers of goods are constantly bringing unanalyzed recommendations for his decision and the ratio of his value to his firm is the ratio of his success at analyzing these recommendations down to their bedrock fact.

*Self-reliance.*—It is approximated that from forty to forty-five per cent of the operating expense of the average business concern is controlled by the purchasing department. It naturally follows that the man at the head of this department must of necessity have the ability to spend this large percentage wisely. In order to do this he must believe in himself and be able to state his beliefs convincingly. To be successful in any line of endeavor one must have faith in one's own opinions and decisions, and must be able to combat opposition with clear reasoning and concrete facts. In purchasing management, more than in most other professions, confidence in the certainty of one's knowledge is essential, since the responsibility is so clearly financial.

One of the traits often lacking, however, in the purchase executive is self-reliance. In too many instances, the backing of the concern with which he

is connected forms a barrier behind which he entrenches himself, growing to depend more and more upon this backing than upon himself. This habit of dependence is likely to begin at the point of contact with the seller's representative and grow gradually until it encompasses his association with all members of his organization. Lacking confidence in himself, the purchase executive frequently allows his decisions to be set aside without due defense of his position or sufficient discussion of his reasons for taking his stand, seemingly upon the side of the question opposite to the side taken by the other department heads. Self-reliance, when not developed to the point of conceit, and reinforced by clear and careful analysis of facts, is one of the characteristics of the purchase executive, that will go far toward securing for him the authority and respect due himself as a man and as the head of one of the most important departments of his organization. No burden of responsibility, such as a *bona fide* purchasing executive bears, can be carried without a great deal of self-reliance.

**Common Sense.**—To a larger extent than in many other professions the purchasing executive is dependent upon his innate common sense for the successful accomplishment of his duties. There are college courses provided for the engineer, the doctor, the lawyer, etc., and many books to which to refer. Modern business concerns maintain schools for salesmen, issue pamphlets of instruction and provide a library of books upon the science of selling, pro-



duction and other duties; but so far, little has been done toward aiding the purchase manager to advance in his profession. Only during the last three of four years have courses been included in the college curriculum that cover even partially the technicalities of purchasing. A handful of books have been written upon the subject; and the only library provided for the purchase manager is his own office file of data, catalogues, trade journals, etc. He must draw almost entirely upon his highly developed mental alertness, power of analysis and common sense plus the acquired knowledge of the needs of his organization, of materials required and the general business conditions governing the buying and selling of that material. Technical knowledge, no matter how exhaustive, cannot be successfully applied without common sense. Technical knowledge is essential for the specialized profession; but, as in practical engineering, technical knowledge is but a start, the native practicality and solid common sense of a purchasing agent is of particular value to his firm.

**Direct Action.**—In the past, direct action was a phrase unknown either to the purchasing agent or to the salesman. Buying was a leisurely process arrived at through slow stages of amusing anecdotes; unimportant gossip of the road; luncheon or dinner with perhaps the theater, and at the last a brief discussion of the material, price, etc. Under the old system, a purchasing agent could see but one or two salesmen during a day and his designation of "buffer" was to a large extent justified. He it

was who kept the salesman occupied and left the way clear for the real head of the purchasing department to transact other business. The salesman, realizing that he was dealing with a "figurehead," a mere order clerk dignified with the title of purchasing agent, had no incentive to speak at any great length upon the merits of the article that he wished to sell. He knew that the real authority for the purchase must come from "higher up" and he, therefore, entertained the purchasing agent in the manner in which that agent desired to be entertained hoping thereby to gain a hearing before the real head of the purchasing department.

Under the modern system, however, ten salesmen may be interviewed in the same length of time that it once took to interview two, because both the purchasing executive and the salesman realize the value of direct action in the transaction of modern business. To-day the time element is the important factor and direct action is absolutely essential for the accomplishment of the day's routine. The ability to come to the point immediately is an asset both to the purchasing executive and to the salesman with whom he is conferring. Lost motion is one of the most expensive attributes of business. Much is gained by the work of a real purchasing executive who knows what direct action is, and who operates on the direct action principle; who can start at the beginning and carry his analysis of the proposition clear through to a decision with no halts or camouflages or mysterious delays and reticences.

## CHAPTER II

### KNOWLEDGE OF AIMS, PLANS AND RESOURCES

**Intensive Knowledge.**—[The province of purchasing enjoins *extensive* knowledge of, and ability to understand, all the various activities of business in general. It demands, to an even greater degree, an *intensive* knowledge of the particular business for which the director of purchases is providing materials and supplies. But the *one essential around which the science of purchasing revolves is the source of supply.*] For this reason it is imperative that the director of purchases know:

1. Aims.
2. Plans.
3. Financial resources.

*Aims.*—To be cognizant of the aims of the concern with which he is connected is of first importance to the purchasing executive in the selection of his source of supply. It is advisable, in the case of limited capital or comparatively small orders, to confine the purchases to a few of the more reliable houses handling the desired material. This policy assures the development of cordial relationship between the buyer and the seller that, obviously, cannot be possible if an attempt is made to scatter the

purchases over a broad area. There will be times when goods might be obtained from a new concern or a firm, bidding for new business, at a lower price than that asked by the firms with which the purchase manager has become acquainted, but usually it will be found more satisfactory to limit the number of firms with which the small buyer is dealing. This makes sure of prompt attention to orders and the granting of a possible favor at times.

If the concern with which the purchase manager is connected is small but has as its aim reorganization at an increased capitalization, it behooves the executive to build up his source of supply in anticipation of this enlargement. If it is deemed advisable by the owners or directors, sellers may be apprised of the company's goal, in which case, the benefit of a better price and good service on the strength of future increased business is gained.

*Plans.*—Too often the last member of an organization to receive advice as to curtailment or expansion of the rate of production is the director of purchases. Unless he is very aggressive and keeps himself in the foreground, he is likely to find himself isolated from the other executives of his firm and in ignorance of what is transpiring. Without including him in their consultations, the heads of the different departments meet, discuss conditions, and decide what they consider best to do. If there is to be a curtailment of production, the department heads using the materials, which in many instances are on the way to the factory, merely refrain from



sending requisitions to the storeroom. If an increase in the output is decided upon, they forward orders for an increased amount of materials which, had he been given an opportunity to say so, would have to be purchased on an unfavorable market. There are many cases on record in which the production and sales departments outlined plans involving the immediate use of materials that could not be obtained for six months or a year.

This overlooking of the purchase executive is seldom, if ever, intentional, but rather the result of the general false idea of the function of purchasing. The task of bringing the other executives of his organization to the point of recognizing the true place of purchasing as an indispensable cog in the wheel of business management, is largely a matter for the purchasing executive himself. He must not expect his title, whatever, it may be, to be taken seriously by the more aggressive men about him if he is content to allow himself to remain in the background, a convenience to be used or ignored at will. In allegiance to his employer, and in justice to himself, he must demand and insist upon his place in all conferences between department heads, whether these conferences are formal or informal. It is by keeping abreast of the details pertaining to his business that the purchase manager is able to make his purchases conform to the plans and requirements of his firm in quality, quantity, price and delivery. He must neither be, nor have the appearance of being, a mere order clerk or "buffer" for salesmen.

*Financial Resources.*—The financial standing of his firm is another of the important factors in successful purchase management. With definite information upon available funds at hand, the director of purchases knows at once whether or not he may demand and receive advantageous terms from the seller. He should also be informed of the usual and unusual drafts upon the resources of his concern in order that he may determine the advisability of heavy buying or, in case of an emergency, that he may buy lightly.

A general knowledge of the business with which he is connected is even more necessary to the director of purchases than to the sales agent, credit manager, or any department head. He must possess the salesmanager's knowledge of what the firm manufactures or sells; he must know the quantity of goods sold in the past and the rate of sales past and present together with the profit thereon. To him the manufacturing department's cost sheet should be accessible at all times. Spending, as he does, so large a percentage of his firm's money he must keep informed in every way possible as to the financial condition of his business. It is only by direct knowledge of the intentions of the directors and executives toward curtailment and expansion and by open discussion of ways and means of carrying out these plans that the purchase manager may govern his purchases in accord with quality and quantity of output under different conditions. The purchasing executive who does not know the aims,

plans, financial resources and credit rating of his firm cannot hope to make a success of his profession.

**Differences between Credit and Resources.**—There is a great difference between credit and resources, though the two terms are often confused. Credit is moral standing. Resources is financial standing. Credit depends upon the reputation derived from the confidence inspired in others. It is not a value in itself but represents a value. In business, credit is the exchange of a commodity for a promise. If the credit of the person or firm negotiating for the commodity is not good, the person owning the commodity will very likely refuse to accept the promise of payment. In other words, if moral standing is bad, credit will not be extended.

Resources, being pecuniary means, is a tangible asset. It is money or property that may be converted into supplies or given in exchange for supplies. It may be seen or touched. But the presence of substantial financial resources does not necessarily mean that the credit of a firm is good. Very often the most solvent of concerns is forced to the wall because of its questionable moral standing. Slow payment of bills, short sighted, money-grabbing methods of dealing that verge upon sharp practice, all tend to lower the credit standing of a financially responsible concern.

A firm having limited resources may be rated "credit good," providing its moral standing is above reproach and it is known to pay its bills promptly. Credit is faith. It is belief. It is expectation of

future payment. If this belief is lost, resources resolve into the amount possible of recovery by law on the part of the creditor.

Broadly speaking, it is more important to know the credit of a prospective seller than to know his financial standing. For financial standing may exist without a vestige of credit, while the firm with a high credit rating may be considered a dependable source of supply even though it is known to be operating "on a shoe string." Moral standing is always preferable to financial standing, be it in the business world or in the world of individuals.



## CHAPTER III

### SOURCE OF SUPPLY

#### **The Necessity for a Coterie of Selling Firms.—**

Just as an intimate knowledge of his own concern is essential to the purchasing executive, so also is an expert understanding of the affairs of the firm from whom he makes his purchases.

The necessity for a coterie of selling firms that may be termed Dependable as well as Reliable, is becoming more and more apparent to the modern purchasing executive. During the war, with its attendant increase in demand and decrease in supply, the purchasing director discovered that few houses could be depended upon even though they had been considered reliable under normal conditions. Undoubtedly, many sellers suffered loss of their customers' faith and are to-day omitted from the Honor Roll of Dependables, through no fault of their own. These firms are, in turn, editing their own Honor Roll as a result of bitter experience with the failure of their own sources of supply to deliver.

With the gradual return to normal business conditions and the readjustment to the new conditions developed from the trials of war times, the purchasing executive is, more than ever before, anxious to

create for himself a list of Dependables compiled from his list of Reliables, for he has realized that a dependable source of supply means that his daily business is half completed before his desk is opened in the morning.

**Difference between Reliable and Dependable Sources of Supply.**—A house, to be considered Reliable, must be able to furnish quality, quantity, price and delivery. It must be reputable, financially sound, equipped to do what it says it will do, and scrupulous about delivering quality and quantity as compared with samples and invoices. A firm, which, upon investigation, shows that it is able to do all these things, may be considered eligible to the Reliable Roll. Only by experience may the purchase director assure himself of the dependability of the firms listed as reliable. A firm that is able to furnish quality, quantity, price and delivery may, for reasons that appear to be weighty, fail to live up to its contract. There may be a strike, a fire, a shortage of materials or an unexpected tie-up in shipping facilities. A house, to be considered Dependable, must show a willingness to live up to its contracts no matter what difficulty may arise between the time of acceptance of the order and its delivery. It must not only *be able* to furnish quality, quantity, price and delivery, *but must do so without fail*. In addition to the qualifications demanded of the Reliable source of supply is that intangible asset called Service or Courtesy.

To sum up, a Dependable source of supply is one

which has all the qualifications of a Reliable source plus Service. The purchasing executive who has completed his Honor Roll of Dependables is fortunate indeed, for he can then place any order from one dollar to one thousand dollars, or upward, and pass the order along to the files as completed.

**How to Locate the Source of Supply.**—In order to find out where he may obtain his materials, the purchasing executive has many sources of information. From trade papers, advertisements and classified business directories he may secure the names of firms dealing in the commodity desired. These firms should be considered merely as possible sources of supply. The purchasing executive must sift these possibilities over and over again through an ever diminishing net. The possibilities are myriad in many lines of purchasing. Through the process of elimination the probable sources of supply may be discovered. These in turn are sorted until the reliable firms, specializing in the particular commodity desired, are arrived at. Then a sample order may be submitted and the selling firm may be allowed to eliminate itself or to prove its dependability.

Trade papers and advertisements are reliable sources of information in so far as the papers themselves are reliable. Many trade papers and other magazines carrying advertising require a guaranty of faith before accepting an advertisement, but even these high-class publications are occasionally in error. Classified business directories are to be

found in most cities and are of occasional assistance in securing the names of firms dealing in certain commodities. Reliable registers such as 'Thomas' or Hendrick's furnish complete lists of producers of all articles and materials throughout the country.

From such sources must the purchasing executive secure information as to the possible source from which his supply will come. Often the list will be so long that he will wish to give up, in which case he may ask the salesman representing a house dealing in some allied line. For example, the salesman for a condensed-milk concern will gladly refer to another firm handling powdered or evaporated milk; a representative of a paving-brick firm knows of several firms supplying building or fire brick, etc. Inquiry through allied lines is often the most efficacious method of securing information as to the best firms and it is certainly simpler than running down a list of manufacturers, jobbers and small dealers in a classified directory.

Many boards of trade and chambers of commerce throughout the country publish booklets listing the various business activities of their members. Such organizations hold themselves ready to supply information concerning the firms listed, information which may be depended upon up to a certain point. Manufacturers' associations also supply data upon inquiry, but it is not to be expected that any organization will deliberately go about to warn a prospective customer of one of its members against dealing with that member.



**Standing of the Probable Source of Supply.**—In selecting the 'seller' whom the purchase manager hopes to depend upon for his supply of certain materials, it is imperative that the standing of that firm be investigated thoroughly. He must make sure that the firm in whose hands he places an order to be delivered, perhaps six months hence, is financially sound. Especially in purchasing machinery which will require future repairs and supplies, must he ascertain the standing of the firm from which he makes the purchase. It is essential that he take this means of protecting his firm and himself from the loss of the entire cost of the machinery through the dissolution or disappearance of the firm from which it was purchased. In placing an order for some specially made article the purchasing executive must have all possible assurance that his source of supply is dependable.

From such sources as Dun's, Bradstreet's and Moody's the rating and names of the officers of almost all concerns may be obtained. Commercial agencies such as Proudfoot's and Dun's furnish special reports upon request and the payment of a fee. These reports give the history of the firm investigated as to fires, strikes, etc., but nothing about their ability to fill their contracts or their policies toward their customers.

**Policies and Principles of the Seller.**—Undoubtedly, it is quite as essential to know the policies of the seller as it is to know his financial standing. It is his policy toward his customers that makes him a



dependable source of supply. His rating may be quite high while his reliability may be at the lowest possible point so far as the purchasing executive is concerned.

The policies of a concern, aside from those firms using their policies for advertising purposes, are frequently difficult to learn. The purchasing director is often forced to discover them by experience alone. Having looked up the rating and made sure of the ability of the seller to carry out his contract, there is no way to learn more save by a trial order, and this is not always sufficient to prove the dependability of a firm. From the representative of the seller, the purchasing executive may glean much that will help him to decide for himself. The firm that is not reliable very often has men who are unreliable—noticeably so. On the other hand, firms operating on a set of open and above-board policies will not employ salesmen who are liable to discredit them.

**Need for Purchasing Agents' Associations.**—From other purchasing executives much may be learned, and this, perhaps, is one of the best reasons for the organization of the Purchasing Agents' Association which has branches in all large and many of the smaller cities. The opportunity to talk over and form opinions of buyers, has long been the salesmen's exclusive property. Frequently, a new salesman knows all about the purchasing executive upon whom he is going to call, from his disposition down to his pet hobby or the way he brushes his

hair to cover his bald spot. The salesman knows, through other salesmen whom he meets in the hotels and on the trains, the policies of the firms and of the individuals with whom he hopes to do business.

But the purchasing executive, because of his obligation to see all salesmen who call upon his firm, is unable to get out to any extent. In former times, it was considered bad policy for a purchasing agent to discuss his business and the firms with whom he dealt with other purchasing agents. There seemed to exist an erroneous impression among purchasing agents that each must hold himself aloof from all others in the same profession. In this way, some advantage was supposed to be gained over the others. How, nobody seems to know.

Under modern business methods, union is considered strength, and purchasing executives are banding together to help each other. Through meetings, formal and informal, much valuable information is gathered about many subjects, and particularly is the alert purchasing executive enabled to learn of the policies of the firms with which he is doing, or is about to do, business.

Knowing the standing, the history and the general manner of conducting business of the selling concern, the purchasing executive is able to place his order in the hands of a reliable seller with reasonable assurance that the order will be filled according to specifications.

## CHAPTER IV

### PRINCIPLES AND POLICIES

#### **Vital Need of Definite Organization Policies.—**

The purchasing agent must study the principles and policies of the people from whom he buys; he should also formulate principles and establish policies to guide himself in his dealings with them and in his dealings with the various departments of his own concern. We shall consider first the principles and policies of the group of sellers, with which he does business, then, after getting a clear notion of what constitutes a business principle and a policy, we shall treat those which the purchasing agent should develop to guide his own conduct.

As he looks over the various concerns from which he may make purchases, he will endeavor to discover those which have established policies pleasing to him, because they tend to result in better service to his firm. By a policy we mean a well-defined course of business conduct which is pursued because it is considered expedient and conducive to success.

The foremost requirement of any undertaking, which deals in any way with the uncertainty of the human element and business conditions, is a well-defined policy. This necessity was realized long-ago, but the result of the realization was not far-

reaching. It was applied only to the sales department, since it was through that channel that the effect of the lack of policies was first felt and analyzed. With the development of goodwill through sales policies came the appreciation of the vital importance of general policies to be adhered to by the entire organization. The habit of living only in the immediate present has been overcome by slow steps, and correct and adequate policies have been formulated by general managers, boards of directors and executives of modern business concerns with very decided success.

It has been discovered that firm policies, rigidly applied, are valuable to every member of every department of the modern business organization. There is a certain group of things which requires policies in almost any business. The following list of policies may be helpful in checking up established policies and in evolving more adequate policies than those in use:

1. Giving a guaranty that guarantees.
2. Living up to all promises made.
3. Giving courtesy and service without stint.
4. Maintaining standard quality of goods.
5. Making no claim for goods that are not proved, by experiment and analysis, to be absolutely true.
6. Maintaining standard price and discount scale.
7. Fair treatment of all customers, large or small.
8. Open and above-board dealing with all competitors.



9. Policy toward employees.
10. Policy toward methods of accounting.
11. Financial policy.
12. Uniform credit policy.
13. Open and above-board policy of salesmanship and sales methods.
14. Clean-cut purchase policy.
15. Policy in accord with law, ethics, society and economics.
16. Ironclad rules against swerving from set policy without due consideration.
17. Policy of coöperation and coördination within the organization.

**Difference between Policy and Principle.**—To differentiate between the policies and the principles of a firm is difficult, because the line of demarcation is sometimes faint. There is a discriminating definition, however, with which it behooves the purchasing executive, as well as the heads of other departments, to become thoroughly familiar.

*A policy* may be defined as a line of conduct arrived at through experience and consideration of the customs and conditions governing the particular business for which the policy is established. It is built up to fit a condition and is adhered to by all members of the organization just as long as that condition obtains and no longer. It should not, however, be modified or changed without careful thought and open discussion.

*A principle* is a precept, frequently evolved from



an established policy that has become, through usage and precedent, an inexorable law. A policy may be deviated from at any time or it may be changed, indeed, should be changed, to conform with existing circumstances. A principle is regarded as invariable and may not be altered without shaking the entire foundation of the business which stands upon it.

When a number of firms dealing in a certain "line" of materials adopt the same general policies, these are known as "trade customs." Usually, the basis upon which a trade custom is established is firm and works to the best advantage of buyer and seller. There are "trade customs," however, that are better called "trade evils," and as such are slowly being investigated by the Federal Trade Board and eliminated or altered. The United States Steel Corporation, whose practice it has been to guarantee price against decline, is a case in point. This price guaranty is a form of rebate, and, as such, is not only unfair practice but illegal as well.

That which is one firm's policy may be another firm's "principle." For example, one concern may consider the discounting of bills as a principle to be complied with regardless of the difficulty and expense that may be involved. With another concern, discounting bills is considered a good policy which may be set aside when deemed advisable. Many selling concerns depend upon the lure of the discount to bring in the money with which to discount

their own bills and those firms, which have as their principle the meeting of the ten-day clause, or whatever the time limit specified on the invoice, are considered the most desirable customers and will, as a result, obtain the best possible service. The satisfactory relations with selling concerns, brought about by the establishment of such a principle, is well worth the occasional expense of borrowing the money with which to meet the bills, even though the rate of interest on the loan amounts to more than the discount.

One firm may object to a certain practice on principle, while another merely considers the practice a poor policy. It may be the policy for one firm to display openly all bids received while with another, bids are held in strictest secrecy. One firm may buy entirely on merit, another may place as many orders as possible with those sellers from whom reciprocal business may be expected regardless of merit.

Selling firms often advertise their policies, or take some one policy as a keynote and keep it before the public until it becomes as familiar as the name of the firm itself. This method of advertising is undoubtedly a good one from the sales point of view.

The following list gives some of such featured policies:

Loft's Candy.....	Penny a Pound Profit.
H. J. Heinz Co. ....	Purity and Great Variety (57).

- Hudson River Tunnels. . . . . Let the Public Be Pleased.
- W. S. Wilson Corporation. . . The Service That Never Ceases.
- National City Bank. . . . . Extreme Promptness Achieved through a Day and Night Staff.

**Bearing of Sales Policies upon Purchasing.**—The Purchasing executive and his department must of necessity reap many benefits from well-established sales policies. Sellers are anxious to add to their list of customers firms that are known for their fair dealing and upright principles. If the fair dealing and uprightness stops with the sales department, much of the value of advertising is lost. Selling firms are entitled to believe that a complete set of rigidly enforced selling policies indicate an equally complete and rigidly enforced set of general policies, including those governing the purchases of materials and supplies. Finding that this is not true weakens the faith of the seller in its customer and decreased service is the result.

Purchasing policies must be of equal fairness and strength as those of the sales or credit departments. The purchase director should know all policies of his firm and adhere to them unfalteringly in drawing up policies for his own department. Each general policy should be analyzed and a purchasing policy drawn up that will coincide with those drawn up by

the managing executives or board of directors. Each sales policy should be analyzed both from the selling and the buying viewpoint, and purchasing policies decided upon with the seller as well as the purchaser always in mind. The following are some of the points for which there should be purchase policies:

1. All specification furnished seller should be complete and accurate.
2. All orders should be correctly written with attention to special stipulations made by seller.
3. Demands made upon seller should be within reason.
4. All promises, verbal or written, should be fulfilled.
5. Sellers should be forced to keep their promises.
6. Insist that salesman give his best proposition first.
7. Refuse to be a party to price beating.
8. See that purchasing methods are ethical and legal.
9. Avoid any method that even verges on sharp practice.
10. Sign no contract that works to the disadvantage of other purchase executives less fortunately placed.
11. See that all letters are calculated to make the best possible impression upon the recipient.



**Purchasing Executive's Policy toward His Organization.**—Having ascertained the line of conduct to which he must adhere as a representative of his company, and having drawn up a list of policies to be followed in his relation to his source of supply, the purchasing executive should look to his own personal conduct toward his organization. Whatever the principles, whatever the policies of his concern, the purchasing executive should himself be above reproach. Even though he is hampered by weak, wrong or entire absence of general policies, he may still draw up a standard for his own conduct and the conducting of his department. He may thus counteract a part of the effect of his firm's short-sighted laxity.

In his relation to the organization the purchasing executive may not only apply the following policies but may even, through example, show the managing directors and other executives the beneficial effect of sound policies.

1. Unfailing loyalty to his organization.
2. Intelligent coöperation and coördination with other departments.
3. Assist accounting department in keeping credit good by prompt passing of invoices.
4. Use every means of saving money without curtailing any department of materials and supplies.
5. Assist the factory in maintaining a standard quality of output and continuity of operation.



6. Insist that other departments assist him in every possible way in the discharge of his duty to his firm.
7. Unfailing courtesy, reasonableness and understanding toward those "higher-up," those equal, and those beneath him in rank.

**Importance of Goodwill.**—Goodwill, while intangible, is unquestionably property, and, as such, is subject to transfer from one person to another. It may be sold, just as the building, fixtures, and merchandise of a firm may be sold, despite the fact that it is merely a "probability that old customers will resort to the old place" (Lord Eldon), and it brings a good price. Goodwill is the status of a concern with the firms or individuals with which business is transacted and, as such, depends upon sound policies consistently adhered to. From the sales point of view it is the most important ingredient of the merchandise sold. Public service corporations have long realized the importance of the public attitude. Manufacturing concerns often feel the need of public goodwill, but, as a rule, look to the sales department to develop this evanescent, intangible, indefinable, yet vital, element of business success.

While goodwill is largely a matter of here to-day and gone to-morrow, it is perhaps easier for the purchasing executive to acquire and hold it for himself and his department than for the salesman-ager. The purchasing executive is not required to study mass psychology nor to study ways of bring-

ing his organization to efficiency in carrying out his policies. In comparison with the number of people with whom the sales force comes in contact, the few salesman calling upon the purchasing executive are negligible. Alone and unassisted, the purchasing executive may develop the goodwill of his source of supply merely through the personal touch. If, upon meeting the salesman, he puts across his honesty, reliability, and straightforward business principles, and if he is able, not only to establish, but to adhere to, sound purchasing policies and maintain his standards of buying, he will acquire the goodwill of that representative and through him, the goodwill of the house represented. By coöperation with the accounting department in prompt payment of bills the purchase director may hold the goodwill of his sellers for an indefinite period.

## CHAPTER V

### ATTITUDE TOWARD SALES SOLICITATION

**Importance of Right Relationship between Buyer and Sellers.**—Correct-functioning relationship between the different department heads within the modern business organization has long been recognized as vital. But it is only in recent years that the functional relationship between the buyer of one firm and the salesman of another has been seriously considered. The modern purchasing agent has at last awakened to the great possibilities of coöperation with the representatives of his source of supply, and it is this realization of the practical benefits to be derived from concordance with the seller that is causing rapid change in the purchasing executive's manner and attitude of mind toward sales solicitation.

**Old Method of Selling and Buying.**—In the past the salesman who succeeded was the one whose sheer personality appealed to the greatest number of customers in his territory. His success could be measured by the degree of friendship he could inspire in the buyer upon whom he called. Often his expense account was unlimited and he was given *carte blanche* to "go as far as he liked" in the matter

of entertaining the buyer. He provided elaborate meals, theater tickets, and even more substantial evidences of favor, and usually if the buyer was in need of supplies, the salesman went away with an order.

Unless through previous use of the materials the purchasing agent or "buyer" (as he usually was called then) often knew nothing about the materials for which he had given his order except what meager details the salesman chose to give him. Very often he had other responsibilities and looked upon the buying of supplies as a side issue. Frequently, too, his duties were those of a clerk and his authority almost *nil*, in which event the salesman talked as little about business as possible and depended upon his personality and ability as an entertainer to inspire the nominal buyer to put in a good word for the selling concern. How far and to what unscrupulous lengths this mode of selling went is covered elsewhere in a consideration of commercial bribery.

Much time, energy and money were wasted under the old system of buying, and the gradual disappearance of the customs of the past is welcomed by buying and selling concerns with equal satisfaction. We are now fairly well launched upon an era of greater commercial straightforwardness, which is, in many ways, altering selling methods and therefore purchasing methods also; introducing what might properly be called a new policy of relationship between buyer and seller. It is the rout



of the old maxim "*caveat emptor*" ("let the buyer beware").

**New Method of Selling and Buying.**—With the advent of the more scientific era in all aspects of production, affecting also, naturally, the modern purchasing executive, the seller has been forced to change his selling tactics. To-day the man who buys knows as much and often more about the goods he buys than does the man who is selling. No longer does the purchasing agent take the salesman's word for his wares. His knowledge of price, processes of manufacture and ultimate use of the materials for which he is in the market has reduced sales effort to a minimum. Selling concerns are more and more realizing that the new purchasing executive knows what he wants and why he wants it, and that no amount of personal magnetism or entertaining ability on the part of the salesman can persuade him that he wants something else. To meet this specialized knowledge and determination to decide for himself just what he will or will not buy has brought into the selling field an entirely new type of salesman who knows the buyer's technical needs better than he knows the mere "selling talk" about the commodity he is selling. He stresses the more intangible value broadly covered under the name "service," which now looms up as one of the great essentials in the satisfactory accomplishment of a purchase. While it is certain that the overstressing of service to the neglect of more tangible values will never meet with favor in



the eyes of the purchasing executives, the element of service is permanent in its modern-day importance.

The present-day purchasing executive looks upon the salesman more in the light of a consultant and a source of information. Knowing a great deal about the material he wishes to buy, he demands an even greater detailed knowledge on the part of the salesman. Sitting at his desk and interviewing one salesman after another with a completeness and a celerity that would not have been deemed possible even five years ago, he adds constantly to his large fund of facts pertaining, not only to the materials in which he is directly interested, but to all materials sold by the concern represented. No longer is buying a leisurely process of obtaining goods at a low price, but a scientific system of securing quality, service, delivery and a fair price.

**Reasons for Former Ill-Will between Seller and Buyer.**—The artificial friendship which, twenty-five years ago, existed between buyer and seller has been gradually eliminated by the advent of the modern purchasing agent. For perhaps ten years the spirit with which the salesman regarded the purchasing agent was one of inward resentment, but outward friendship. He could no longer wheedle an order by means of friendship and, in many instances, at least, he could not obtain an order on the grounds of the merits of his particular articles for sale. He was face to face with a problem that he could not, or would not, solve. And so he ceased trying to

do business with the purchasing agent and tried harder than ever to reach the man "higher-up."

This was largely the fault of the purchasing agent himself, but the reluctance of the business managers and executives of the concern employing him to include real authority in the bestowing of the title had a great deal to do with it. The purchasing agent, realizing that he was unimportant, attempted to assume an importance that he did not feel. He was arrogant. He formed the habit of looking upon all salesmen with active dislike. Having found that buying through friendship was no longer "done" he went to the opposite extreme and refused to be civil to the salesmen.

Not always sure of what he wanted, the purchasing executive pretended to know precisely, and, without giving the salesman a hearing, he assumed that the vender represented did not have it. Anxious to impress the men calling on him with his imagined importance, he forced them to wait long hours in the anteroom and often sent word at the last moment that he would be unable to see those who had wasted valuable time outside his door. It became the custom to adopt calling hours and to refuse to see salesmen excepting between certain hours, no matter how urgent the matter might be. When an interview was accorded the purchasing agent was cold, disinterested and unresponsive except in the matter of price, which must be excessively low. He understood his job to be exclusively that of saving money for his concern

and, with this ever before him, he refused to listen to anything the salesman might have to tell him, unless it dealt with price. He resorted to all sorts of expedients in order to force the salesman to lower his estimate, and some of these so-called "expedients" were patently "sharp practices."

**Gradual Change in Attitude.**—On the whole, the salesman could not be blamed for resenting the presence of a man who, though no longer the old-time buyer, had not developed into a modern purchasing agent, even though he bore the title of such. Under the circumstances it was to be expected that he would go "higher-up" whenever possible. He had little opportunity to exert his selling ability and little hope of a sale when dealing with the purchasing agent of ten years ago.

It is the general consensus of opinion that the war has done much toward changing the attitude of the salesman toward the purchasing agent and also that executive's attitude toward the salesman. The spirit to-day is one of greater coöperation, of mutual respect and confidence, and reciprocity of commercial courtesy. This is the natural consequence of the dispelling of arrogance, suspicion and lack of foresight on the part of the purchase-director, and the new attitude has opened the eyes of the salesmen to the possibilities of business transacted with men who have specialized in buying, just as the salesman has specialized in the art of selling.

During the hard years of the war when the pur-

chase-director floundered in the sellers' market, he learned much concerning the value of courtesy, tact and fair dealing. In his, often unsuccessful, attempts to secure materials with which to keep his factories running, he found himself accorded somewhat the same treatment he had accorded others, and he learned almost over night the lesson which, under the pre-war conditions, it would have taken at least five years to teach him. To-day the purchasing executive is taking his profession seriously and his one desire is to meet the salesman halfway. This change has been recognized by salesmen, and the result is a constructive coöperation that works to the advantage of every one concerned in the business of buying and selling.

**Sizing up the Purchasing Executive.**—The modern salesman is trained in the analysis of men. He studies the physical appearance, facial expressions, manner of speech, actions, etc., of his prospect and makes his sales attack in the manner best calculated to appeal to the particular type of individual to whom he desires to make a sale. Having "sized up" his prospect, the salesman adjusts his sales talk to the mental speed at which his analysis tells him the purchaser is most likely to follow him. He watches carefully each change in expression, each little action, for the effect of his talk. He knows the authentic psychological fact that every idea is accompanied by an emotion—that is, a feeling *for* or *against*, or a neutral feeling.

Through analysis, the salesman knows whether to



appeal to the prospect by data, facts and reason, or by generalization of merits and by emphasizing the policies of his house. He recognizes at once the technical-minded man, the imaginative, the emotional, the analytical, the calculating type, etc. By careful attention to the conversation of the purchaser he may find out that a competitor or a seller in another line has failed to make shipment as per specification and he promptly lays stress upon the service rendered by his own firm.

It is no longer the general practice of reputable salesmen to ferret out the particular hobby of the purchaser and to join him in riding it. But a sufficient number of selling concerns countenance, or at least wink at, this practice to make it advisable for the purchaser to look out for this method of selling.

The purchasing executive is the object of highly concentrated effort, it must be remembered. The trained salesman approaches his prospect with a single-minded purpose to sell his merchandise. He is in a position of advantage over the harassed purchaser whose days are spent in interviewing, one after the other, men who each have but one idea. The purchaser must divide his attention between many different articles while at the same time concentrating for the moment upon the article before him. It becomes most important, then, that the purchasing executive know the technic of "sales approach" and "prospect analysis."



**Personal Analysis of Physical Appearances.**—The business of purchasing, in consequence, requires a strong and sophisticated will power to resist the trained blandishments of the enthusiastic salesman, and to grasp the mode of the salesman's "size up" and plan of operation. He needs, himself, to know how his weak or vulnerable spots are searched out and attacked, and how to meet the human equation.

Having learned all that he can about the needs of his firm and the articles to be purchased he does very well to study himself from a sales viewpoint. It is valuable to him actually to study salesman-agement and salesmanship and keep in touch with modern knowledge and discussion of these subjects.

An interesting start is, perhaps, an analysis of his own physical and temperamental characteristics. There is a certain degree of knowledge available on the subject. For example, the broad, high, square-shaped forehead indicates analytical power, intelligence, perseverance, and severity. The more it tends toward rounded and cornerless outlines, the more flexibility of character does it indicate. The retreating forehead indicates imagination, feeling, wit and keen perception. The projecting forehead is a sign of weakness of will.

The eyes indicate the feeling rather than the intellect, though there are a few rules that are more or less reliable.

The chin and lips are watched not only for construction but also for expression. Thin lips usually indicate industry and order, etc. If the lips are

drawn down at the corners they show a weak or pessimistic disposition. Large, well-defined lips show energy and vitality. Lips, however large, if well-formed and well-closed, indicate power, ability, energy and good sense.

These "appearance indicators" have been found fairly reliable by salesmen and executives who have analyzed the subject, but good logic is necessary in making deductions, since there are exceptions to all rules.

**Personal Analysis of Speech.**—It has been said that any man who talks 500 words to a good salesman will get himself accurately tagged. It is generally conceded that what a man says is by far the best way to analyze him, and for this reason the wise purchasing executive will guard against talking too much. From his manner of speech, the salesman is finding out the speed of his thought, his method of thinking and his type of mind. If he asks many questions the salesman decides that he is analytical and presents his proposition in an analytical manner. If he does not ask questions, but waits until the salesman has finished his talk, he is ticketed as being less interested in the details than in the proposition as a whole.

By what the purchasing executive says, the salesman gains a knowledge of unfortunate purchases, accidents occurring to orders in transit, delayed shipments, etc., and adjusts his sales talk to fit the expedient. By the manner in which the purchasing executive addresses him, by the tone of his voice and

the selection of words, the salesman knows at once that he is welcome or unwelcome. His impression of that first greeting will remain with him long after he has forgotten the possible order received at the end of the interview.

Many of the most successful men of business—J. P. Morgan, E. H. Harriman, etc.—have been noted for their silence. The principle of analysis through speech has long been recognized and systematically guarded against. The astute purchaser does not allow the salesman to know what is going on in his mind until the final decision has been reached. In order to think clearly upon the information furnished him in the sales talk to which he has listened attentively, the purchasing executive does not wish to be bombarded with more and more words upon the subject. He wishes to digest the data already received and to come to his decision without interruption. It is, therefore, often a fact that a salesman “talks a man out of an order.”

**Personal Analysis of Actions.**—The normal type of purchasing executive understands that he must give so much time each day to the interviewing of salesmen. He listens attentively to what is being said and listens without committing himself. He gives the salesman to understand that he is sufficiently interested in his sales talk to give his undivided attention, but is not to be rushed into placing an order. By his actions he puts the salesman at his ease without being overfriendly. He should not allow himself to betray the fact that he is bored

by too frequent interviews, even though he is mentally fagged by the constant effort called forth. He should not allow suspicion to creep into his attitude, no matter what grounds he may have for suspecting the salesman of overstating or understating. He should never pretend to be busy. From the purchasing point of view this is not a fair stand to take. If for any reason it is not convenient to see the salesman it is far better to say so, giving the reason if possible, than to see him and listen with only half attention.

By the purchasing executive's actions, the fluttering of his hands, the shifting of his feet and the roving of his eyes, the salesman is quick to see a lack of interest or a fluctuation of the attention and will at once change his tactics in order to recapture the attention or to distract his mind from the thing that has occupied him for a moment.

The action of the eyebrows is a very important symptom to watch in the opinion of the salesman. Raised eyebrows show surprised attention and sometimes doubt. Lowered eyebrows show an antagonistic attitude.

The purchasing executive should maintain a constant watch over his every movement and expression, else his policy of concentrated attention plus science will lose half its "punch," and the salesman will know almost as much about his final decision as does the purchaser himself.

**Personal Analysis of Surroundings.**—The surroundings of a man speak, perhaps, more than his



person. An office that is clean and up-to-date will impress the caller with the energetic, highly efficient personality of the purchasing executive. A desk that is free from papers and catalogues is pleasing to the salesman, because there are no unpleasant tag-ends of unfinished business to distract the prospective purchaser's attention from the sales talk. From the purchaser's point of view a clear desk is advantageous for the same reason. Odds and ends within the view of the salesman often cause irrelevant conversation that takes time and gets nowhere. A clean desk has a bracing effect upon the salesman and, indicative as it is of the energetic, efficient, purchasing executive, is almost sure to bring him to the point quickly and without preamble.

The man whose office is not up-to-date, and whose desk is cluttered with all manner of papers, booklets and samples, is sure to be tagged as lacking in ability, or, worse, in progressive alertness. The type of man who can work day after day, surrounded by disorder, is usually very hard to sell, but once sold will continue to buy that particular "line" through habit. Very often he is put down by salesmen as unreliable, inefficient and "old-fogyish." Used as he is to the constant array of odds and ends always before his eyes, he cannot expect to give his undivided attention to the salesman, and the effect is either loss of interest in the sale on the part of the salesman or a subtle attack with renewed energy.

The ideal office surroundings for the modern purchasing executive, to whom time is of vital impor-



tance, consists of a flat-topped desk, free from ornamentation or confused disarray. The chairs provided for callers should not be too comfortable and should face the light while the purchasing executive keeps his face in the shadow. Bookcases, file-cases, etc., complete the furnishing of the purchasing executive's official workshop. Simplicity, utility and order should be the key.

**The Purchasing Executive's Analysis of the Salesman.**—The purchasing executive, being in the position of the aggressor, is privileged to demand information, while it is the business of the salesman to furnish the desired data. It is even easier, therefore, for the purchaser to study the salesman than for the salesman to study the purchaser. The same appearance indicators used by the salesman may be adopted by the purchasing executive and to them may be added:

The business card.

The hand clasp.

Manner of approach.

Method of presentation.

Attitude toward defeat.

The business card often tells the purchasing executive much about the firm represented by the salesman, especially if the card is so covered by cheap advertising as to hide the name of the salesman. This type of card is usually presented by an inexperienced or mediocre salesman, who depends upon the advertisement of his merchandise rather than upon his own ability as a salesman. Very

often the firm sending out such a man with such a card is unreliable and unsound in its policies. The advertising business card may impress certain types of buyers favorably, but the modern purchasing executive prefers to listen to the salesman rather than to read the advertising on his card.

On the other hand, a neatly printed or engraved card, bearing only the name of the salesman and no hint as to his business, is very likely to arouse the antagonism of the purchasing executive and his first impression will no doubt color his interview. Receiving the unidentified name of the salesman will always bring up the questions: What does he want? Who does he represent? What is he selling? What is the matter with his firm? Is he ashamed of his business, etc.?

The ideal business card, the card that creates the correct impression and puts the purchasing executive in a receptive mood, is the card that gives clearly and concisely the name of the salesman, the name of his firm and the city in which that firm is located. When possible there should be a word or short phrase telling the kind of merchandise in which the salesman wishes to interest the purchaser, such as fittings; paints; steam shovels; office equipment, etc.

**The Handclasp.**—Salesmen, as a rule, are reluctant to offer to shake hands with the purchasing executive as they have learned, through experience, that many purchasers dislike the practice. It is well, however, for the purchasing director to offer

his hand to the salesman. This gives an additional opportunity for judging the type of man with whom he is about to talk. The cordial handclasp has the supplementary advantage of putting the caller at his ease and of paving the way for the friendly relations necessary to the modern coöperation between salesmen and purchasing executives. There is, of course, much overconscious technic given to a handclasp, ranging from stiff formality to exaggerated friendliness. An easy, simple, and natural manner in this respect is preferable.

**Manner of Approach.**—It is often said that the “approach is everything.” In purchasing, as in selling, this saying is decidedly applicable. The purchasing executive goes to his desk each day with the understanding that, in all probability, he will be called upon to meet a dozen or twenty different types of salesmen, each with his particular manner of entering the office and greeting the “prospect.” It requires a levelheaded, well-poised man, indeed, to meet these salesmen, many of whom will affect him unpleasantly, with invariable courtesy.

Of the pleasing types nothing needs to be said. But during the day the purchasing executive may encounter one or all of the following unpleasing types:

1. The blusterer, who tries to rush an order either by hinting at a rise in the market or by offering a special price concession if his proposition is accepted at once.

2. The preoccupied youth, who conveys the impression that he is a salesman as a side issue, his real interest being in baseball, golf, dancing, etc.
3. The frightened or hesitant type, who may be "green" material or may have encountered a "grouchy" purchasing executive or two. Or he may be timid by nature, a square plug in a round hole.
4. The too friendly salesman, who gives information in the manner of one conferring a special favor.
5. The arrogant type, who condescends to tell the purchaser something about the goods he wishes to sell and appears to be appalled at the gross ignorance of purchasing executives in general.

Each type of salesman calls forth a different emotion in the long-suffering, but ever patient, purchasing executive, whose duty it is to maintain an even temper, tolerance and a tranquil mind.

**Ideal Salesman from the Salesmanager's Point of View.**—There are a certain group of qualities that go to make up the ideal salesman from the sales manager's point of view. Listed they appear briefly as:

1. Stamina (unwillingness or inability to acknowledge or even recognize defeat).
2. Persuasive force (physical magnetism or patient facility in affecting the ideas and opinions of others).



3. Quickness and adaptability (readiness to adjust himself to his surroundings and to different temperaments).
4. Alertness and perception (readiness to absorb information, intelligent grasp of a situation).
5. Unusual energy and ambition to succeed.

According to the salesmanager, any man with a fair share of the above qualities can sell goods, at least some kinds of goods, and in some territories. The men are selected with a view to the type of men to whom they will sell. The measure of the type of mind the salesman is going to encounter is judged mainly by the average amount per sale.

From the point of view of the purchasing executive the qualities that go to make up the ideal salesman are somewhat different from those selected by the salesmanager. He prefers the alert, wide-awake type of man, who can state his proposition concisely and without preamble; whose persuasive force is not noticeably prominent; whose readiness to absorb information is in direct ratio to his ability to impart information; and whose adaptability serves only as a stimulus to quick action.

Perhaps the quality of stamina or persistence is the one most undesirable from the viewpoint of the purchasing executive. Having weighed the matter of placing his order with a certain salesman and having decided, for reasons best known to himself, to place the order elsewhere, the purchasing executive does not wish to be hounded by the salesman who is unwilling or unable to acknowledge, or even



to recognize, defeat. He is very likely to put that type of salesman down as a nuisance and to avoid dealing with him, or the firm he represents, in the future. The purchasing executive who is busy, who knows his firm, his requirements, etc., will not look kindly upon the firm that employs the overinsistent type of salesman who tries to tell him again and again what he wants and why he wants it. Persistence in looking after the order after it is placed is all very well and pleasing to all purchasing executives, but persistence that needlessly takes up the time of the purchaser is annoying and tends to lessen the cordial relations existing between the purchaser and his corps of salesmen.

**Building Up a Sales Defense.**—Having analyzed himself from the salesman's viewpoint, and being cognizant of the characteristics within himself that makes for the too successful sales attack, the purchasing executive knows where to begin in building up a sales defense. Broadly speaking, the points that would impress the salesman at first glance are:

Dignity

Tact

Energy

Courtesy

Efficiency

Judgment

Openmindedness

All of these qualifications are present in some degree in every successful business man, but often they are negated, upon first meeting, by preoccupation, nervous mannerisms, etc.

The dignity of the purchasing executive's mien should be such that the salesman will see at once the

necessity of stating his proposition honestly, concisely, and of giving his best price first. No purchasing executive should humiliate himself by entering into "price beating" discussions.

His manner should be neither too friendly nor too frigid; neither suspicious nor gullible; gracious but not necessarily affable; and courteous, always. Too much stress cannot be put upon the importance of courtesy in business relations. A courteous dismissal will often leave a better impression with the salesman than a large order for goods gruffly or ungraciously given.

Tact has been defined by Webster as "ready power of appreciating and doing what is required by the circumstances; nice perceptions; peculiar skill or faculties." Having tact, the alert purchasing executive may be sure of controlling any situation that may arise. Without the aid of this quality, knowledge, ability and training are practically useless to him. Tact may be innate or acquired, but it must be present in large quantities for the successful transaction of business, the cordial relationship between men, and the coöperation between buyer and seller.

The impression of energy may be created by any one or all of a great many indicators. The truly energetic man would have difficulty in concealing that quality from the salesman or from any other man he might meet. Energy is inherent power, high-pressure perception and dynamic force. The man of energy impresses the salesman at once with

his mental activity, his capability and his incisive vigor. His facial expressions, manner of speech, method of thought, surroundings, etc., all tell the story of energy. The salesman, recognizing this quality in the man with whom he has to deal, will waste no time in idle talk. He will come straight to the point in a manner designed to gain and hold the attention of his prospect.

But the prime timesaver for the busy purchasing executive is the creation of an atmosphere of efficiency. Quick action, the elimination of lost motion, is the aim of every modern purchasing executive, and a desk that shows no tagends of yesterday's business, no forerunner of to-morrow's activities, is quite the most important factor in impressing the efficiency of the purchaser upon the mind of the salesman. This appearance of businesslike efficiency should be created without the pretense of being busy. As a rule, a purchasing executive who allows the salesman to see that he is rushed does not get the best that the salesman has to give. Better by far to pretend that he is not busy, thus presenting a calm exterior to the caller, thus putting him at his ease and giving him the opportunity to choose his words and present his proposition in his own way.

Solidity of judgment is too often absent in the specialist of any calling. Yet of all the qualifications desirable in business relations that of fine discrimination and reasonable conclusion is most essential. The trained salesman is quick to see the lack of acumen in the purchasing executive and to

make his sales attack according to his prospect's thinking principles. One of the greatest assets of a purchasing executive is the ability to weigh carefully and reasonably all facts set before him and to differentiate between those that are important and those that are not; to estimate the value of the article under discussion, and to arrive at a conclusion without loss of time or perceptible hesitation. For successful purchasing, facility in judging is of vital necessity both in relation to the purchasing executive's firm and in regard to the impression made upon the salesman who calls upon him.

It is essential that the purchasing executive maintain a neutral attitude toward all salesmen and their propositions. A disposition toward fairness, a wish to show impartiality, will go far in establishing the desired cordial relations between buyer and seller. In order to create the impression of open-mindedness the purchasing executive must *be* open-minded. He must possess understanding, not only of his firm's needs and the materials under discussion but of the aims and ambitions of the salesman and his house. He must be reasonable. He must listen to the argument of each salesman in turn and estimate each statement in relation to what is right in itself according to conditions that obtain. Under no circumstances should he close his mind to the facts that are being presented. No matter what personal or business grounds he may have for jumping at a conclusion, it is most important that he delay his decision until all the data available are before him.



Open-mindedness is vital to progress. To close the mind against growth is to invite mental stagnation.

The building up of a sales defense consists in presenting to the caller an exterior calculated to conceal the weak spots for which the salesman is looking in order to secure that specialist's best proposition in the shortest possible time.

**Desirable Impression to Leave with the Departing Salesman.**—The best single asset of the purchasing executive is a staff of friendly and cordial salesmen who like him both for himself and for the business he gives them. Coöperation is the slogan of modern merchandising, and coöperation is impossible without cordial relationship. The contact between the buyer and the seller is not potent in the same way that it once was, but under the new régime, friendship has taken on a different meaning, together with an even greater importance than formerly. A purchasing executive, whose relations with salesmen are right, frequently secures decided advantages and favors for his firm.

The modern purchasing executive, realizing the value of the salesman as a bureau of information and as a staff assistant, in a sense, strives to make each salesman like him personally. His desire is to meet the salesman on the same basis that he would meet any other group of men, not as buyer and seller, but as man to man. He wishes the salesman to see the best there is in him while in his office, and to go away with the feeling of having met a man



with whom he enjoyed the contact even though his call netted him nothing.

**Should There Be Specified Calling Hours?**—The question of whether or not the purchasing executive is justified in establishing calling hours, or in continuing the enforcement of those established in years gone by, is one that has been much discussed both among purchasing agents themselves and among salesmen upon whom the restricted hours react unfairly.

Clearly, the limited day is a great help to the busy purchasing executive in the transaction of his business. By setting aside certain hours during which he is not to be disturbed save in an emergency, he is able to keep his desk fairly free from accumulated mail, etc.; to analyze the data which are so important a part of his mental equipment; to confer with department heads, etc. In the event that the purchasing executive is surrounded by a corps of specialists in different materials, it is perhaps practical for the real head of the purchasing department to shorten his hours of receiving salesmen. A representative of a lumber concern will naturally want to talk to the man who has specialized in lumber before he talks to the purchasing executive; a chemical salesman can better present the merits of his wares to a chemist than to a man who knows little or nothing of chemicals, etc. If these specialists are a part of the purchasing staff, the limiting of hours does not curtail the working day of the salesman, and he will not resent the fact that he

could not see the purchasing executive in person.

**The Salesman's Side of Calling Hours.**—The general consensus of opinion is that it is not fair to limit the salesman's hours of work, and the present-day trend of thought tends to eliminate the restriction. Even those purchasing executives who cling to the practice for personal reasons have caused the rule to be modified in such a way that it does not apply rigidly, especially to out-of-town callers. The salesman who has traveled many miles for the purpose of seeing a certain purchasing executive is not going to be put off by a reception clerk with the information that he must wait until to-morrow without a feeling of resentment. This may, and very often does, result in strained relations between the salesman and the purchasing executive. In case the salesman has some special offer to make, it is entirely possible that he will present it to another firm more inclined to accord the salesman a welcome.

**The Compromise.**—The modern tendency toward coöperation between salesman and purchaser has brought about a desire on the part of each group to see reason in the argument of the other. The salesman is willing to concede that there is something more to the job of purchasing than the mere placing of an order. The purchasing executive has come to understand that the job of selling necessarily encompasses a certain amount of time wasted, which, for the salesman, is money lost.

One director of purchases for a large manufactur-

ing concern maintained hard-and-fast rules about receiving salesmen after two o'clock in the afternoon. Three years ago he removed the barrier between himself and his source of supply and thus saved thousands of dollars, the greater part of which, he says, was accomplished after 2 P. M. The saving came through "market tips" that would not have been offered had the salesmen felt resentful toward this purchasing executive, and through special offers that would have been presented elsewhere had he not made it a point to receive these salesmen at any hour they chose to call.

Another purchasing executive caused to be printed on his letterhead, an invitation for salesmen to call upon him before noon whenever possible. In this invitation he gives as his reason for the request the fact that after noon his office is open to all members of his organization and that salesmen are frequently interrupted in presenting their propositions. This same purchasing executive has instructed his reception clerk to find out what each salesman has to sell, where he comes from, how long he will be in town, etc., and to communicate these data to him before she admits, or refuses to admit any salesman. As a result, this purchaser is known far and wide as a courteous, fair-minded man, and retains the friendship of every salesman who calls upon him, even though he places orders with only a limited number of firms.

## CHAPTER VI

### SERVICE

**Service a Moot Question.**—From all quarters of the buying and selling world has come the question of what constitutes “service.” The purchasing executive has his definition of the word. The sales-manager has his interpretation. The United States Patent officials have investigated and made their ruling. The United States Bureau of Standards has taken up the question of standards of service. Each group of men has rendered its version of the word “service” and, although the different interpretations are in a manner related, no two groups have transfused the sense of service in exactly the same way.

It appears that frequent misunderstandings have occurred through the misconstruction of the term “service,” and that much of the annoyance arising from this misconstruction might be eliminated by a fusion of the different meanings read into the word. It is the purpose of this chapter to survey, briefly, the several constructions put upon the word “service.”

**What the United States Patent Officials Rule.**—The attempt of a bank to register a trade-mark



caused the United States Commissioner of Patents to rule that "service"—which is all that a bank or other nonmanufacturing institution has to sell—"cannot be considered a commodity in trade, nor be entitled to the privileges or prerequisites that attach to tangible goods, such as trade-mark protection." Through the investigation preceding this ruling came the decision that service is not entitled to be considered on a plane with goods that can be marked or tagged or analyzed by chemical or physical tests, and that "an intangible interest is not an article of merchandise."

The United States Patent Office contends, however, that by reason of its use in advertising and selling, the word "service" has come to have a well-defined meaning, indicating that goods so labeled or advertised may be expected to give good service to the purchaser. Broadly speaking, service means to the United States Patent officials the same as durability or quality.

**Service According to the United States Bureau of Standards.**—Quality, performance and practice constitutes all there is or can be to service, reasons the United States Bureau of Standards in its attempt to establish and maintain a standard of performance and of practice as well as of quality. The Federal experts place the following interpretation upon the respective standards of quality, performance and practice:

*Standards of quality* are fixed by those specifications for material which, by description or sample, or

both, fix in measurable terms a property or group of properties which should be possessed, and serves as a basis on which materials are made, sold and tested.

*Standards of performance* are fixed by those specifications which, in case of machines and devices, set the requirements of operative efficiency or action.

*Standards of practice* are supposedly based upon standards of measurement, quality and performance, and encompass the technical regulation of construction, installation and operation.

It is the objective of the United States Bureau of Standards to clarify the understanding of service between makers, sellers, buyers and users, in just the proportion that standards of any other kind are maintained.

**Service, as It Appears to the Modern Salesman-ager.**—The modern salesmanager, having analyzed the public mind, advises his salesmen to devote at least one-third of their sales efforts to the selling of service. Here the word means:

1. Anticipating the customer's wants and supplying those wants.
2. Making no promises that cannot be fulfilled and fulfilling all promises that are made.
3. Providing full technical details of the article offered in order that the purchaser may know exactly what he is getting.
4. Relieving the purchaser of all responsibility from the time his order is placed until his goods are delivered.

### 5. Applying the psychology of "personal attention."

This last mentioned qualification of service is, in the opinion of the salesmanager, by far the most important. It does not mean "friendship" in the old sense of the term—the modern salesmanager is no more anxious to return to the former "good-fellowship" in selling than is the modern purchasing executive; but personal attention means giving "scrupulous care to the customer's slightest need, to the peculiar nature of the business, and to everything that individually makes that customer different from other customers." The four preceding qualifications are, in most cases, covered by the policies of the selling concern, and the salesman is drilled in the art of presenting these policies in terms of service.

#### **The Purchasing Executive's Idea of Service.—**

One middle western firm has stated its definition of service as "businesslike methods and fair dealing; delivering the goods right at the right time; extra-careful inspection; and a guaranty that guarantees." This statement as nearly defines the word according to the purchasing executive as it is possible to define it.

To the purchaser the word "service" is second in his list of three essentials that go to make up a satisfactory transaction. These three essentials are **QUALITY, SERVICE, and PRICE.** To him service is not a descriptive word modifying the article purchased. It does *not* mean to the purchasing ex-

ecutive, that goods will give service (will wear), or that it contains the property or properties as per description or sample, or that it fills the requirements of operative efficiency or action.

These points are covered by the first of the purchasing executive's three essentials—quality. To him quality describes the material in every way that material may be described. Service applies to the selling concern rather than to the article sold.

But service does not mean that the purchasing executive's wants have been anticipated. The astute salesman does not allow his customer to suspect that his wants have been anticipated. The salesman assists his customer in discovering the need of some particular article and supplies that need. It is the manner of supplying and not the manner of selling that the purchasing executive calls service.

The modern purchasing executive, being well informed, does not require a great deal of information upon the technical details of the article under discussion, nor is he likely to accept promises that cannot be fulfilled. He knows the principles and policies of the concern with which he is dealing and he knows the process of manufacture through which the article must pass. Very often a promise that cannot be fulfilled will tell him more about the concern with which he is dealing than years of satisfactory business transactions. Having a comprehensive knowledge of the details of the article under discussion the purchasing executive naturally expects the salesman to know even more about it and



to furnish such information as he may require. He does not, however, call the furnishing of this information service. If the purchasing executive gives the salesman's readiness or ability to supply information or to guarantee the fulfillment of certain promises a name, that name would be "salesmanship" and not "service."

The salesman's desire to give personal attention to his specific needs is recognized and appreciated by the purchasing executive, but here, again, he is more likely to apply the word "salesmanship" rather than "service," even though he knows that the personal attention of the salesman to his order will result in service.

The modern salesmanager's definition of service includes all of the attributes demanded by the purchasing executive, but entirely different points are stressed for selling purposes. The salesman who sells service—and modern salesmanship includes devoting at least one-third of sales effort to the selling of that intangible asset—without definite knowledge of what the purchasing executive understands by the word, is skating on very thin ice indeed. And the purchasing executive who places his order with a firm guaranteeing service without specific knowledge of the points covered by that guaranty, is not in a position to demand redress in case the material purchased does not come up to his expectations.

**What the Purchasing Executive Expects When He Buys Service.**—While the selling concern is stressing service (meaning personal attention to the

buyer's particular needs) the purchasing executive may be interpreting the word in terms of delivery, placing of the material in his plant, attention to installation and prompt repair service in case of breakdown. The salesman, from a selling point of view, knows the importance of these attentions, but to him, providing full technical details of the article offered and relieving the purchaser of all physical effort in connection with his purchase, may, and very often does, lead him to overlook the fact that the purchasing executive is concerned more with the definite details of receiving and performance of the article than with the abstractness of sales talk. The salesman emphasizing personal attention often loses sight of the many contingencies that may arise after the order has passed out of his hands and into the hands of the manufacturing or shipping departments. To him, personal attention is likely to stop with his surrender of the signed order blank. But the purchasing executive, his mind upon delivery, etc., is not aware of the limited scope of "personal attention" and "service" of which the salesman talks so glibly. It is essential for the best interests of each that the seller understands the attributes of service from the viewpoint of the buyer and that the buyer understands what the salesman means when he promises service.

Summarizing the meaning of service as it appears to the purchasing executive we have:

1. Prompt delivery in quality and quantity ordered.

2. A guaranty that guarantees.
3. Promises unconditionally made good.
4. Purchasing risks fall upon the seller.
5. Fair dealing and businesslike methods on the part of the seller.
6. Attention to installation (in case of machinery or appliance).
7. Attention to upkeep of machinery and appliances after installation.
8. Prompt delivery of reorder, repair parts, supplies, etc.

## CHAPTER VII

### COÖPERATION AND COÖRDINATION BETWEEN EXECUTIVES

**Reasons for Demanding Coordination of Departments.**—The purchasing department of any large corporation exists solely for the purpose of providing other departments with necessary materials and supplies. In importance it ranks with the manufacturing, the sales, the engineering and the accounting departments. There is an endless chain of inter-dependence of one department upon another, each unit owing its individual rise or fall to the degree of coördination of the other units that make up the whole. A faulty or incomplete understanding of the function of one department by the head of another department is often the cause of grave misunderstandings and serious blunders. A lack of attention to seemingly unimportant details, such as exact data upon requisitions, careful checking of goods received, paying of invoices, prompt information as to shipments on the way, etc., may be the reason for the directors of the business to put the purchasing department down as inefficient when, in reality, the fault is in one of the departments or subdepartments interwoven with the business.

Because of the fact that flaws and weak spots are



so easily traceable to the purchasing department, where they are likely to stop, it behooves the purchasing executive to safeguard himself and his workers in every way possible. In order to do this, he must set tactfully about putting before the head of each department the vital necessity of intelligent, coöperative coördination throughout the respective departments. It is very probable that he will be set down as meddlesome by some of the more temperamental executives. Very often his insistence that details be accurately and promptly forwarded to his department will be considered as "fussiness"; but, in justice to himself and to his firm, he must not only secure active coöperation with his department but coördination as well. An equal amount of pulling together is necessary between each of the other departments, but we are concerned mainly with purchasing and its interrelation to other functional parts of business management.

**Responsibility of Purchasing toward Other Departments.**—It is the opinion of many purchasing executives that, upon the efficiency of the purchasing department, depends the whole existence of the manufacturing concern. This is a broad statement and one that would be hotly contested by the sales, engineering, manufacturing and accounting departments. Goods should be assured of a market before primary materials are purchased or manufacturing machinery secured. Having located the probable consumer, the engineering and manufacturing departments must be organized and running smoothly

before primary materials may be converted into salable articles. The financing of the business must be arranged for. Credit must be established before purchases may be made. Each detail must be worked out carefully in relation to all other details.

From the viewpoint of the owners and directors, no one department is more vital than any other department to business success. It is generally conceded, however, that a badly managed purchasing department may do more toward disrupting the well-oiled machinery of a going concern, than the mismanagement of any other department, with the possible exception of the department of sales.

The purchasing executive is charged, primarily, with the procuring of materials desired in the exact quality and quantity to fill the requirements. If, for any reason, ignorance of needs, lure of low price, blandishments of trained salesmen, etc., he fails to do this, the effect will be, briefly, as follows:

1. To buy a *higher quality* of material than required increases cost of manufacture without a relative increase in the value of the article produced.
2. To buy a *lower quality* than required increases cost, by decreasing sales through lowered standard of output.
3. To buy in *too large quantities* increases cost by tying up capital, by larger and unnecessary carrying charges, and through loss of materials by depreciation, falling market, etc.

4. To buy in *too small quantities* increases cost, through interrupted continuity of operation and curtailment of production.

Each of the above effects may be submitted to endless division and subdivision, but the first effect of wrong purchasing, either in quality or quantity, like the first effect of faulty administration in any department, is upon the cost. Cost is the fundamental basis of all business efforts.

**Interdependence of Purchasing upon Other Departments.**—The suitability of materials purchased depends in turn upon the completeness of data upon requisitions calling for these materials. The head of the laboratories who requisitions alcohol, without specifying that it is to be used for testing and must, therefore, be first-grade, grain alcohol, is in no position to lay blame upon the purchasing department if he receives a drum of wood alcohol or a mediocre grade of a denatured variety commonly used in paints, etc. The purchasing executive is aware, no doubt, of the use to which the alcohol is to be put and will secure the kind and quality actually required, however incomplete the data may be. But it should not come within the province of purchasing to fill out requisitions before they are passed on to the order clerk. It is the business of the purchaser or his assistant to verify each requisition, but those requisitions should be accurately filled out by the man writing them.

In case the desired quality of materials cannot be procured, samples of the quality or qualities avail-

able should be sent to the manufacturing department for test and analysis. The purchaser is then justified in making the purchase in accordance with the choice of that department.

The quantity purchased should be governed by the rate of production, the storage room available, the condition of the market and the financial standing of the firm at the time of purchase. For information as to the quality and quantity purchased, the purchasing executive is dependent entirely upon the departments with which his department is correlated. The engineering, manufacturing and accounting departments are in closer active relation to purchasing than is the sales department, but even here there is an interweaving of activities.

**Detailed Information that Must Come to the Purchasing Executive.**—Much of the knowledge that is required by successful purchase management must be obtained from sources outside the organization itself. Matters of supply and demand, market fluctuation, dependability of sellers, etc., must be sought from the daily news, business reports, experience, gossip, etc. But data upon the following points are obtainable only through the different departments within the corporation, and upon the accuracy of these data depends the successful operation of the purchasing department.

1. Full specifications as to quantity, quality, and intended use of materials requisitioned.
2. Advance information as to curtailment or expansion of production.



3. Changes in specifications, even though these changes do not have a direct bearing upon the materials purchased.
4. Date of receipt and condition in which goods are received.
5. Maximum and minimum limits of storage spaces.
6. Amount received, requisitioned and on hand in storeroom.
7. Rate of production.
8. Rate of sales.
9. Cost of production and selling.
10. Selling price and gross or net profit.
11. Overhead expense of entire organization.
12. Financial standing and resources.
13. Specific duties and responsibilities of each department, and the relation of these departments to purchasing.

**Coordination between Engineering and Purchasing Departments.**—The first requirement made by the purchasing executive upon the engineering department should be for exact and detailed specifications upon requisitions. It would seem, at first thought, that so obvious a necessity need not be stressed, but the truism that the more a man knows the less is he able to tell, applies especially to the trained engineer. Perhaps it is because the details of the materials requisitioned appear so simple to him; perhaps it is because the typical engineer is inclined to live with his head in a cloud of figures; but it is generally conceded that one of the most

difficult feats in purchasing is that of obtaining all necessary data concerning machinery, appliances, specially made castings, etc., from the engineering department.

It requires tact and patience on the part of the purchasing executive to bring about a clear understanding of the interrelation of specifications and satisfactory purchases. General coördination between all departments will assist the purchaser in gaining the friendly coöperation of the head of the engineering department, since he will not be so likely to consider the attempt at "getting together" a breach of business etiquette on the part of the purchasing executive.

Coördination between engineering and purchasing departments will:

1. Eliminate delays caused by incomplete data furnished seller when asked for quotations.
2. Decrease the chances of purchasing wrong materials.
3. Save the time of engineer and purchaser in answering and asking questions.
4. Assist in reducing cost of certain materials through simplification of details (these simplifications are often suggested by the seller himself).

**Relation between Manufacturing and Purchasing Departments.**—It is from the manufacturing department that the purchasing executive receives the greater number of his requisitions, since it is that

department that uses the large bulk of materials and supplies purchased. For this reason the purchasing executive must keep in closer touch with the manufacturing than with any other department within the organization. Formerly, and even today, in many of the less modern concerns, purchasing was a division under the manufacturing department and on a level with the division of stores. That the stores section is of vital importance to purchasing no one will deny, but that it is of equal importance, except in rare cases, is to be doubted. The relation between stores and purchasing will be taken up in a later chapter. Suffice it here to say that between the stores division and the purchasing executive there must be a direct channel through which information may pass promptly concerning materials received, requisitioned, and on hand, together with reports on incompleting orders, condition of goods delivered, etc.

Upon the manufacturing department must the purchasing executive depend for his information as to rate of production, plans of curtailment and expansion, performance of materials purchased, laboratory reports on samples sent in for test and analysis.

The manufacturing department depends in turn upon the purchasing executive for:

1. Prompt delivery of proper materials and supplies.
2. Maintaining standard of quality of output.
3. Continuity of operation.
4. Keeping up to standard rate of production.

**Interrelation of Sales to Purchasing Department.**

—In speaking or writing of the five important units of business organization, buying and selling always come first in the list. These are followed by engineering, manufacturing and accounting, with their subdivisions of planning, stores and credit, etc. Materials must be bought before they may be sold, the purchase price controlling the sales price to a greater or lesser degree, according to the type of business and the manufacturing processes involved in the conversion. But it is difficult for the purchasing executive to show the salesmanager the vital importance of coöperation and coördination between their respective departments.

The advertising manager is interested only in the finished product and its possibilities of appeal to the public mind. The salesmanager also considers the finished product together with methods of selling, etc. To these men, the difference between purchasing and sales is the difference between primary materials and the finished article. The manager of the production department is called into consultation with the sales and advertising manager at frequent intervals and asked to assist in plans for the future. He it is who most often passes the information as to these plans to the purchasing executive. As a rule this information comes in the form of a tersely worded and incomplete requisition for certain materials. More than likely "rush" will be scrawled along the margin of the requisition. The purchasing executive is expected to purchase exactly



what is required at a price that will be satisfactory to his firm and to have the materials on hand at the time specified. If he fails in these requirements (and there is no reason why he should *not* fail in one or all of them) his department is at fault. There are many examples of the failure of an advertising and sales campaign, due to this method of keeping the purchasing executive in ignorance of the plan until too late for him to secure the proper materials for manufacturing.

With proper coördination, the purchasing executive, the engineer, production manager and accountant join the sales and advertising managers in outlining future plans. In this way, and only in this way, may the success of each department be assured.

The purchaser who sits back quietly and allows conferences to go on about him without protest is justly responsible for the failure of plans to work out according to schedule. He must be aggressive and insistent upon his share in the plans in which his department plays so important a part. The life and success of the business depends upon the coördination of all departments, but coöperative coördination between purchasing and sales departments is the vital element in manufacturing and selling.

**Interrelation between Accounting and Purchasing Departments.**—There is a vital and, as yet unrealized, need of coördination between the department of purchase and the department that pays the bills for goods bought. In all large business organiza-

tions, provision is made for the fixed expenditures of each department. These expenditures are, as a rule, charged to manufacturing, upkeep, overhead, etc., according to the system of accounting employed. They include salaries of employees, percentage of rental, insurance, etc. Besides the usual fixed expense, the purchasing department also spends a large part of the total income of the business. This expenditure is chargeable to the different departments using the materials and supplies, but primarily it must be charged to the purchasing department. As a rule, provisions are made in the accounting department for a certain weekly, monthly or semi-annual purchase-expense budget and within the limitations of this amount the purchasing executive is free to roam. In case of a temporary shortage of funds, however, he should be warned by the accounting department in order that he may not overstep the bounds. In case, also, of an unusually large purchase at especially favorable terms, the order should not be placed until the accounting department has been informed in order that it may prepare for payment of the invoice.

All invoices are sent to the purchasing department for approval. It is the custom of most concerns where discounts are taken, to have all bills which are subject to discount approved by the purchasing department on or before discount date. This frequently means that approval must be given before the material is received. After bills are paid they are usually returned to the purchasing department

for comparison with goods upon receipt. Since most goods are sold f. o. b. shipping point, and therefore belong to the purchaser from the time the shipper receives his bill of lading from the carrier, it does not matter that goods have not been checked with invoice before payment is made. Any reliable seller will as gladly make necessary adjustments after, as before, receiving payment.

Through coöperative coördination the purchasing executive may assist the accounting department in:

1. Keeping the firm's credit good by prompt approval of invoices.
2. Giving prompt information as to unusually large expenditures.
3. Curtailing purchases as much as possible during temporary crises.
4. Giving information as to special terms not appearing on invoices.

**Relation of Purchasing to Economy of Manufacture.**—Only recently has the importance of standard quality of output been included in the cost figures of manufacturers. Much has been done in recent years along the lines of standardizing the quantity of output—so much per day, per man, etc.—with closely figured cost of manufacture. But the standard of quality, while included in a way, has been allowed to take care of itself to an astonishing degree. Industrial engineers are now taking up the question of the uniformity of quality of production, studying it consciously instead of including it by accident,

so to speak. Cost, according to these engineers, is not only a matter of dollars and cents, but the measure of efficiency of labor and materials combined to produce a certain quantity of a certain standard quality. The value of quality may be high or low in relation to quantity of output, but it should grade high in relation to price and in comparison with the cost of manufacture.

With the realization of the fundamental need of manufacturing a uniform quality of goods, comes the necessity of renewed effort on the part of the purchasing director to obtain for his factories a uniform quality of primary materials. It is in the purchasing department that uniformity of quality of the final output begins. The purchasing executive whose mind dwells upon price to the exclusion of quality, paying so much money for so much primary material without regard to the market fluctuations, will frequently force the production department to produce a quantity of output that is below the standard set for quality. In most instances of this kind it is the production department that bears the brunt of the burden of lowered standards.

With the recognition of the importance of the purchasing department in modern business organizations it has been found that lack of coördination between executives is the real cause of lowered standards. The purchasing executive is being more carefully selected and more fully informed as to the aims, plans and standards of the other departments



than formerly. He is not only picked for his ability as a purchaser but for his coöperating ability as well. His presence is vital in all consultations. The modern purchasing executive not only considers the saving of money on his purchases but the saving of losses to the sales department through faulty primary materials supplied to the production department.

Modern business is beginning to link uniformity of quality of output with uniformity of quality of primary materials to the advantage of the production department, whose function it is to manufacture a uniform quality, to the sales department, whose life depends upon the selling and repeated selling of goods that are uniform, and to the purchasing department in which all uniformity of finished products actually begins and whose management may make or break the concern. Economy of manufacture is no longer the responsibility of the manufacturing department but of all departments, without exception. Joint responsibilities cannot be discharged without coöperative coördination between all executives within the organization.

## CHAPTER VIII

### TECHNICAL KNOWLEDGE OF REQUIREMENTS

**Vital Necessity for Detailed Knowledge.**—There is a general impression that the purchasing executive is present for the sole purpose of saving money for his firm. This is only partly true. The alert purchasing executive undoubtedly does save money, but he does not do it by purchasing the lowest quality of materials at the lowest price. There are examples without number in which factories and even railroad systems have been crippled or tied up because of the misjudged economy of a short-sighted or uninformed purchasing agent who bought on price instead of quality.

The real job of the director of purchases for any type of business is to obtain the right materials and supplies, and, by so doing, satisfy the technical needs of his firm. To do this requires comprehensive technical knowledge of the needs of his firm, coupled with an equally broad knowledge of the materials procured. Some of the main points to consider in the purchase of materials are:

1. Proposed use of the article purchased.
2. Manufacturing process of material purchased.
3. Technical knowledge of price.

**Proposed Use of the Purchase.**—Without a knowledge of the ultimate use of materials, the purchasing executive may not differentiate between those that are suitable and those that are not. The many competitive articles upon the market, all ostensibly for the same general purpose (in the claims of salesmen, at least), compel technical comparison. Each one has one point, usually, in which it excels competitive merchandise; and it is difficult for the man without technical insight to select for his firm those materials best suited to requirements, even when his own technical department heads assist in comparison. It may happen that the main point in which one article excels another is the one that technically makes that article useless for the purpose for which the executive is buying. There are many addressing machines, for instance, all offered for general business use; but the size of the address list and the frequency of changes really determines the selection of a machine, because of the differing types of machines and the cost involved.

In the purchase of machinery one of the important items for consideration, aside from the value of the machinery itself, is its location in the building or plant. What floor space is available? Will a box machine requiring twenty square feet be as suitable as one requiring a higher ceiling but less floor space? In selecting a motor the purchasing executive must not only know the horsepower, voltage and cycle, but whether it must be open or closed as a protection against moisture; whether a pulley

extension is necessary or would be useful, etc. If he is buying roofing, he must take into consideration the climatic conditions, which in New York require very different qualities from California or Texas. What is the nature of the building upon which the roofing is to go? Will tile be satisfactory, or is it too heavy? If he is buying carbon paper for the office-workers, how many copies of letters, orders, etc., are to be made at one time? Must the quality be light weight or heavy weight? What color, etc.?

It is not the business of the purchasing executive to waste his time in looking up the detailed uses of each purchase he is called upon to make, but a general knowledge is essential, and this must be augmented by explicit information to which he may refer in case of doubt. In all probability he knows approximately what is needed through the placing of previous orders, records of which are available in his office. But upon receipt of a requisition for new or unfamiliar materials it behooves him to make a personal investigation as to the use of this material. There is always a possibility that the man making the requisition does not know exactly what he is specifying. In fact, this is more or less chronically the case. There are innumerable instances wherein the purchasing executive bought exactly what was specified and learned afterward that the article desired was entirely different from the one ordered. In the case of chemicals, especially, too much stress cannot be put upon the necessity of exact knowledge of the ultimate use to which they are to be put.



**Manufacturing Processes of Materials Purchased.**

—To know through what processes the materials to be purchased have passed is to reduce the danger of wrong buying to a minimum. This knowledge is closely allied to the specialized knowledge of values in the matter of price. It has been summed up (by Rendsfoos) as consisting in the ability to substitute standard labor and standard material for special. The cost of standard material is, of course, much lower than that of special, but without the knowledge of how the material is manufactured, what materials and what labor have gone into the manufacture of it, the purchasing executive may not know that he is paying for special labor and materials. Knowing what the process is, through which the raw materials have passed in order to be available for his purposes, the alert purchasing executive is able to divide his source of supply into two classes, those who are equipped to fill his orders and those who are not. Orders should be placed with those firms that specialize in the particular commodity demanded. A small shop may be quite willing to accept the order and either manufacture the article by hand with special labor cost and often with less efficiency, or it may sublet the order to the very factory to whom it should have gone in the first place. In either event, the concern placing the order will pay a higher price than is necessary for the commodity.

Combining the knowledge of the cost of the raw material incorporated in the manufacture of the

material purchased with the process and the approximate cost of manufacture, the purchasing executive has at hand a reliable basis upon which to judge price-fairness.

**Manufacturing Process in Relation to Time Element.**—The element of time is an item in the purchase of supplies, and here again enters the necessity for a knowledge of the process of manufacture. A purchase is a transaction that is, in effect, performed at some future date. The date of delivery of the material is stated definitely by both parties to the contract at the time of signing. If the process of manufacture is such that delivery of the goods may not be effected until six months after the order is placed, it would be foolish for the purchasing executive to demand, and the salesman to promise, immediate delivery, or delivery in three months. And yet just such demands and promises are made every day and by the more reliable houses, too. The purchasing executive, who knows how long it will take to make the particular article his firm demands, will place his order in ample time to assure delivery; and he will see that the selling concern is forced to carry out its part of the contract.

One of the most effective ways of applying pressure in case of delayed delivery is by first finding out the reason for the delay and then pointing out to the manufacturer how this difficulty may be overcome. Giving the manufacturer and his salesman to understand that the purchasing executive knows

all about the article purchased, from the raw material to the time of delivery, has the effect of securing the best possible service for the firm buying the material.

**Knowledge of Price.**—The successful purchasing executive is a storehouse of detailed information, and especially is his mind filled with price lore. This knowledge of values, even without the exact price paid, is absolutely essential, and may be developed only through experience in buying, practice in approximating the cost of purchases, and close application to current market quotations. The purchasing executive who buys only a few articles, in large or small quantities, will be able to remember exactly what he has paid in a great many instances, but if he is in daily contact with a multitude of different articles, he may not hope to keep the list of prices in his mind. For this reason, and for reference at all times, the cost record should be kept separately from other records.

There are many methods of strengthening the "price memory," but the purchasing executive himself is the one best able to decide which of these methods is most satisfactory to him. The daily trade papers contain price information on all raw materials and many finished and semifinished articles. It is a physical impossibility for the busy executive to follow these papers daily, but he may keep in touch with the general trend of the market and specialize upon those materials in which he is vitally interested. The executive who sees, through

market quotations, an era of high or low prices in certain commodities is prepared to save a great deal of money for his firm through heavy or light buying at the right time.

**Knowledge of Values.**—Knowing values, the master of price will rightly look with suspicion upon the prices that are too low; but in comparing prices he must take care that the basis of quotation is the same in quality, standards, specifications, delivery, terms of payment, etc. In order to secure business, irresponsible or reckless firms sometimes make ridiculously low prices, and, having deprived a competitor of the order, become indifferent about its execution, or find means of boosting the price. Care must be taken that the order is placed, not with the lowest bidder, all other things being equal, but with the lowest *responsible* bidder.

The purchasing executive who knows values will investigate thoroughly any bid that, to all appearances, is too high. Perhaps the quality of the article quoted will better serve the purpose of the company than the quality bid upon by other firms. The higher priced material may last longer or go farther, or in some other way prove an economy in the end. Inquiries as to the reason for the higher price may elicit information that will prove invaluable to the purchasing executive in pointing out to him the fact that his firm is demanding an especially made article which, through a few minor changes in the plant, may be substituted with a standard article. The saving thus accomplished on one order will some-



times cover the expense of the changes necessary in order to use the standard article.

**Price versus Performance.**—Under the old system of buying, when each separate department made out its requisitions, and very often interviewed the salesmen as well, the purchasing department had very little to say about price or quality of the goods for which orders were written. The matter of the suitability of the material purchased, for the use to which it was to be put was merely the opinion of one individual. Under the old régime the highest price was supposed to purchase the highest quality. In the eyes of the buyer, the test of performance did not enter into the transaction. Then it was the policy of the greater number of buyers to purchase only the best—the “best” being the highest-priced article obtainable. Then the price was the guaranty of suitability.

All this has been changed in modern business management. Purchases are centralized with a specialist in charge. Only on rare occasions does the salesman get beyond the office of the purchasing executive to talk to an engineer or foreman. The suitability of different materials is decided by test and analysis, and the purchasing executive has the final decision as to placing his order. He knows, through reports from the laboratories on samples submitted, which priced material is best suited for the purpose to which it is to be put. He knows that the highest-priced material is not always the best for his use and that the lowest-priced material is not always

the cheapest in the end. He buys, not on price but on performance, first, last, and always.

**Data Necessary for Successful Purchasing.**—The purchasing executive who knows the value of all commodities to his particular concern is fortunate indeed. He is then able to weigh each point carefully from all angles, sifting the important from the unimportant data accumulated. He can decide as to the suitability of the material submitted, the fairness of the price asked, and the ability of the selling concern to live up to its contract. His specialized knowledge assisted by detailed information at hand in his office is his assurance that, so far as is humanly possible, he will secure for his firm those materials and supplies that will come up to the standards set.

The requisitions for supplies as written by the different departments or by the storekeeper are, as a rule, far from the dependable sources of information that they should be. Incomplete or inexact data as to kind, quality and intended use of the material requisitioned usually appear on the request in place of the full specifications or the number or sign indicating the file in which this information may be found. Even in case of standardized materials and supplies, when all that is necessary upon the requisition is the standardized number or size, the important symbol is often either omitted entirely or wrongly given.

In addition to requisitions and the data which should be written thereon, there must also be on file, in the office of the purchasing executive, inspection

reports, laboratory analyses and physical tests of the material used and of material which may be used at some future time. Of course, all commodities are not adaptable to all kinds of tests, and it may not be deemed necessary to secure specialized reports upon every article purchased by the firm, but, broadly speaking, some sort of analysis should be at hand that may be depended upon by the purchasing executive whose duty it is to know exactly what he is buying and why he is buying it.

There should be a record of the past performance and quantities used, in comparison with other qualities of materials which have been tested from time to time, available in the office. The purchasing executive must be ever on the alert for new materials that may prove superior to the old, and for deterioration in those materials now being used. Particularly must he guard against buying goods on mere precedent. Business houses are constantly changing, and the firm that supplied certain materials which were satisfactory two years ago may have changed to such an extent that it is not supplying the same quality as formerly. A constant check should be maintained upon all materials, no matter how reliable the concern that is furnishing them.

Many concerns maintain on their staffs specialists in the more important materials used. For example, the International Harvester Company has, attached to its purchasing department, a specialist on wood, an expert on paint and an expert on steel, etc. For small firms, this is not practical, but they

have recourse to consultation services of professional experts whose business it is to furnish accurate reports upon the materials sent to them for analysis.

**Guarding against Unnecessary Purchasing.**—In all business houses there is bound to be a great amount of lost motion due to the manifold activities being carried on under the jurisdiction of different department heads. The director of purchase, through the requisitions that come to his desk, is enabled to keep in touch with much that is transpiring about him without the necessity of leaving his office or conversing with any but his own staff of workers. It is a well-known fact that, in all big organizations, the province of the different departments must of necessity overlay at some point. This conflicting of activities naturally finds its center in the office of the purchasing executive.

Through requisitions for materials and supplies he learns, for example, that the engineering department is building an addition to the plant and installing new labor-saving devices in place of old. He learns also that the operating department is repairing a floor or building a platform and patching up an old machine with new parts. By combining the requisitions for lumber for building and repairs, the alert purchasing executive is enabled to obtain a better price in the larger order. Or it may be possible to use parts of the machinery discarded by the engineering department to patch up the old machine. Again, by referring to his files of goods



received, he learns that a new typewriter has been delivered to one department and discovers that the old machine will fill the needs of the half-time operator in another department.

To keep the need of purchasing at a minimum, the purchasing executive must see to it that the goods or supplies bought are not wasted. There is a general human tendency to be lavish with supplies, when a large stock is on hand and freely distributed. To guard against leaks of this kind, large corporations make it a rule that, in order to get a new article, the old one must be turned in. Express companies have this ruling in regard to lead pencils. Employees asking for a new pencil must hand in the stub of the old one. The lead is extracted from indelible pencils thus turned in and is used to make indelible ink for the counter.

At the risk of getting into the bad graces of members of his organization and of gaining a reputation for stinginess, the purchasing executive should use every possible means of guarding against waste and needless buying. But the purchasing executive is a busy man. It is not within the physical prowess for him or his assistants to catch all duplicate or unnecessary orders. He can, however, keep careful watch and by asking for the coöperation of the departments making requisitions he may reduce the purchase expense to the lowest possible point.

**Quantity Purchases.**—Within the last few years a new policy has appeared among sellers as to the quantity purchase. Particularly in connection with

wholesalers and jobbers has this change been evident. The old sales plan, based on the theory that the cost of selling and handling the larger order was less than the cost of the small order, is fast passing into the limbo of the out of date. Modern business has decided that the price should be based upon the type or character of the firm, rather than upon the quantity of goods purchased by that firm. This new policy has developed through the attempt of manufacturers to prevent price cutting of standard articles made possible by the low price at which large quantities were formerly sold.

For the benefit of the manufacturer who buys, however, there still exists a price differential between carload and less-than-carload lots. In order to increase the size of their sales, sellers offer the inducement of a lower price for quantity purchases. Many modern purchasing executives depend largely upon this reduction in their efforts to make their departments show a saving at the end of the fiscal year. It often happens that this practice has disadvantages that outweigh the advantages, however, and care should be taken to consider the quantity purchase from all angles.

In order to accomplish a real saving on the large order, the purchasing executive must have accurate knowledge of the storing facilities of his concern. The oversupply, when delivered all at once, is likely to cost more, despite the very good margin allowed, than the small quantity, even though an appreciably higher price has been paid for the lesser order. The

disadvantages of stocking and storing an unnecessarily large supply, subject to deterioration, depreciation, theft, fire damage, and loss of interest on the money invested should be considered as of greater importance than mere price.

**Quantity Purchase under Blanket Orders.**—The disadvantages of placing the larger order for the purpose of effecting an economy is largely obviated under the blanket order. This form of order may cover any length of time and any quantity of material. It must be drawn up accurately, care being taken to incorporate in the space between the heading and the signature of the purchasing executive all information necessary to assure the filling of the order precisely according to the quality, quantity, price, and time of delivery agreed upon. A blanket order may be so worded as to cover every possible contingency. It may call for a definite quality to be delivered as called for, or to be shipped on certain specified dates throughout the time covered by the order. It may call for the supplying of “the entire requirements of the buyer for a specified time at a certain price or at the market price.” It may call for the supplying of the buyer’s “entire requirements in a certain line, at a sliding scale of prices depending upon the quantity consumed during a certain period.” It may call for the seller’s entire output.

In placing a blanket order the purchasing executive is at liberty to combine any desired group of requirements, submitting these to the seller for rati-

fication. With the purchaser's carefully worded blanket order at hand, it then falls upon the selling concern to decide which of the requirements specified can or cannot be filled, and an order equally satisfactory to both parties to the contract may be drawn, if necessary, with concessions made by both the buyer and the seller.



## CHAPTER IX

### THE STUDY OF FUTURE TRENDS AND FORECASTS

#### **The Proven Need of Forecast Study in Purchasing.**

—The severe depression of 1921 had as one effect the impressing of business men with the great practical need of studying forecasts, trends and business cycles, particularly from the purchasing point of view. Many business reputations were lost during this period, because of over-optimistic buying, or the reverse. "Hunch" was used as against detailed analysis—with disastrous results. One over-pessimistic banker has said, "I am through with these men who claim to have 'vision.' They have cost me millions." But what he really meant was that men of roseate visions and mirages had failed. Vision based on competent forecasting is the safest of procedures. Untold millions were "written off" of inventories during 1921 as a result of failure to forecast the coming slump which had been clearly predicated by competent forecasters.

An article appeared in a business magazine early in 1921, entitled "Why Some Big Corporations were Caught with the Goods." Its opening paragraph was something like this: "We daily read in the newspapers such headings as 'Chicago Whole-

salers Write Off \$7,750,000 Depreciation'; 'Big Packing Company Did \$900,000,000 Business with Practically No Direct Profit.' ” Such statements about big business are rather startling to the average layman and make him wonder why these giants of industry had to acknowledge to their stockholders that the slump in value of the last three months of 1920 wiped out all their substantial profits for the balance of what started as probably their most profitable year.

However, it is interesting to note the reason for the great losses by deflation, and remember that almost as great losses can be sustained by failing to prepare for an advancing market. This is one of the especial problems of the purchasing agent and is one which he must consider most intensively and with competent assistance.

**Effects of Deflation on Purchasing.**—It was clearly demonstrated that many companies, in the active market of the post-war boom, were “caught with the goods,” and it is probably equally true that many in an improving market have been “caught without them.” Of course, the object of all purchasing agents is to prevent loss to the organizations from either cause. To illustrate the effect on a business, when not buying with the market, the two following instances are cited which came under the observation of Park Mathewson, inventor of the Business Barometer Dial, in the boom of late 1919 and early 1920, and the deflation period, at the end of the latter year:

One large manufacturing concern in New England used every means of careful analysis and checking, estimating and forecasting its needs, through budgetary control of buying, selling, expense, etc. Through such intensive means of analysis, in connection with what it gathered from carefully scanning the reliable forecasts of banking and business houses or publications, the company began in the early part of 1920 to reef its sails and make for the business shore with as little ballast aboard as possible. By summer it was running very light, and when the squall of the buyers' strike hit the United States, it was in the best position to work along out of deep waters with the least possible damage. In other words, by analyzing and following the fundamental trends of business this organization had forejudged the falling conditions, which many analysts and forecasters had foretold.

Another company in practically the same line, located in the middle west, followed the trend of its buyers who were ordering freely and who continued to do so, well into the summer. On the surface it seemed necessary to carry a big stock, and this company was caught with a high record inventory on the first of July. The wholesale markets had already begun to slump and by the end of the year some of its goods on hand had depreciated nearly 70 per cent in value. Purchasing agents will know without being told what happened to its profits and also to its surplus. In fact, the depreciation on its \$50,000,000 inventory practically wiped out its sur-

plus of \$20,000,000 and profits for the year as well.

An example of this kind is a practical object lesson to show that wise policy and technic by a purchasing agent can save the profits of five years of operation in an emergency.

**Business Cycles and Planning Ahead.**—The purchasing agent should be in the “crow’s nest” or “lookout,” of the business craft equally, if not more often, than the sales director. The sales department may figure out its plans for a year ahead, but, without the purchasing agent’s coöperation in obtaining the raw materials to manufacture, or the finished materials for them to resell, on terms at a price that will meet competition at the time of sale, the sales department, as well as the financial department, will be greatly handicapped and the aim of all departments—profit—will be that much lessened if not entirely consumed. The fundamental saving of economic tendency, or the “business cycle,” may be the responsible factor. It cannot be overlooked without grave danger.

There has been much discussion of the “business cycle,” and its irresistible effect on business, prices, and profits. When the cycle’s trend has not reached its full swing it constitutes practically an irresistible business pressure—like the tides of the sea. When it starts up steadily it is almost equally futile to resist its trend. We do not as seriously regard the forward trend as we do the backward, for the reason that we can usually make money while prices and business are increasing, whereas, we are pretty



sure to lose money when they are decreasing, at least on inventory on hand. When we are approaching an upswing in the business cycle, it is profitable to give attention to the conditions which manifest themselves.

**Changes in Quantity or Kind of Goods to Be Bought.**—Sometimes we need not fear any extreme increase in prices but, what is almost equally important, we may run into a heavily increasing bulk of business or the buying of a different *class* or *quality* of goods.

Therefore, it is important that the men in the lookout study the distant horizon, as well as the immediate sea around them, in order to sense, at the earliest moment, the changes which are always brewing in the big beyond. As the astute purchasing agent knows, it is the part of wisdom to buy "early and often" in the forward swing of the business cycle, as it would naturally be to buy sparingly when it is on its backward curve. However, each purchasing agent should be the buying pilot for his own boat, no matter how many compasses, barometers, charts and other useful instruments he may employ to assist him in his navigation. There are details in each business which are individual to that business, and, therefore, it is not possible to advise generally when and how to buy or sell without a careful mixture of common sense and experience by the buyer and seller and very careful consideration of the angle which will have the greatest effect on his own business.

In times of change every buyer should carefully consider whether his industry is *completely-readjusted* or is only in the *process of readjustment*. An industry which has been actively "deflating" for from twelve to eighteen months may be said to be reasonably readjusted. If it has not gone through this process it may be considered to be still unadjusted.

**Effect of Foreign and Speculative Buyers.**—In many businesses the foreign markets and world trade and conditions are as necessary to watch as are those at home. It becomes increasingly apparent that the import and export of goods have a direct effect on domestic supply and prices. We thus realize that when foreign market is not absorbing our surplus goods, it has a strong influence upon the home market price and we can often take advantage of this condition. It is, therefore, an important duty of a purchasing agent carefully to watch the present and future trend of buying and selling in foreign countries in his plans involving our own present and probable future prices. Careful study of foreign trade conditions and trends is most valuable to the forelooking purchasing captain.

Another angle of importance to the purchasing department is the condition of the speculative market. It should realize fully the power of the speculative buyer who buys and holds for a rise during the seller's market. In such markets, prices are boosted overnight and, unless a proportionate raise can be

made in the selling prices, a disastrous condition is created, for almost any business which must buy its materials in quantity, hurriedly, in the open market, and which has any reasonable competition. Speculation in commodities is not, of course, nearly so important, where the prices and market are stagnant or declining; but, where the market is beginning to pick up and quantities are in demand, even if their prices do not rise rapidly, the speculative element will have an effect on the market, and therefore should be watched carefully and arranged for in advance by the astute purchasing agent.

**The Purchasing Agent's Forecast.**—The buyer for a big company certainly has a man's job in itself in coördinating and fulfilling all the needs of an organization, for which he may be expected to buy anything from a pencil to a pachyderm. Any purchasing agent should not be blamed if he thinks his job is difficult enough as it is, and that anybody who suggests that he have "second sight," or be a "forecaster," is asking too much at four, or even five, figures a year. He believes he should not be expected to take another job on top of his regular man's size work; some agency should compile a forecast of the trend of business in such a plain and simple manner that it can be applied without any elaborate, or fancy, instruments, or "high-brow" thinking. It is a service that should be undertaken by the Government—but if not by some private agency which can profitably give the time to this work. It appears certain that it will be more simply

and practically worked out in years to come than it has ever been before. In fact, the Department of Commerce is now much interested in the proposal to assemble certain figures along future trends, or forecast lines, for the assistance of American business men.

Generally speaking, the making of a forecast should be done on this formula: Take the best available forecast service supplied by experts, covering general business conditions; rate this 60 per cent; then get some index figure indicating the comparative situation in your industry as a whole, and rate this 30 per cent; then analyze the conditions of your own individual business and rate this 10 per cent. These three factors (general, industrial and individual) properly combined will provide a combination index figure very accurately representing your situation.

**Fundamental Factors on Business Forecast.**—Few business men realize the value to them of some simple method of checking up present and future general business conditions, based upon fundamentals which are practically agreed upon by all experts as closely indicating the business situation. Such analysis is of so great value to any executive that a set of fundamental factors, showing their relation to general business conditions, is herewith given in detail. This will illustrate how such "check-up" knowledge can be visualized by business men. A graphic chart, designed by a business research organization, for its clients, will be analyzed to illus-



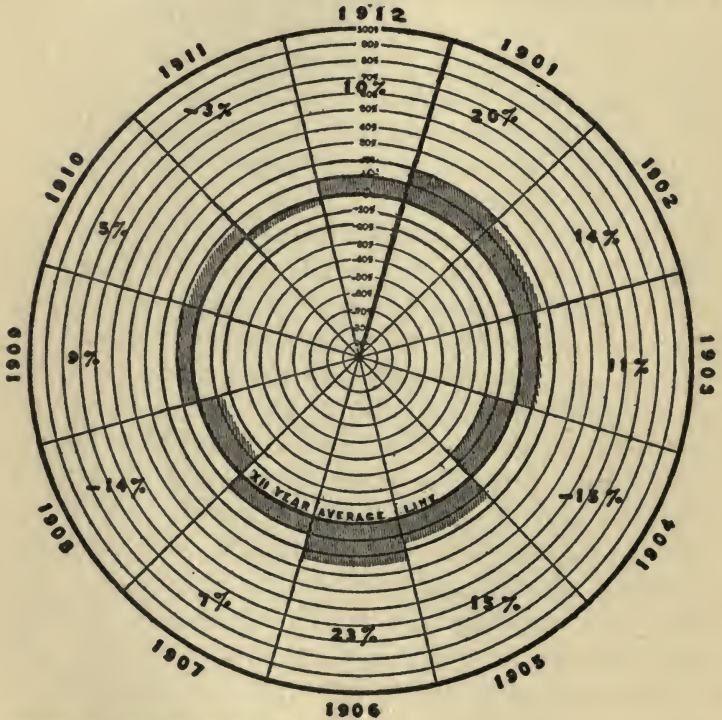
trate how the *trend of general conditions affects individual businesses*. Through individual knowledge of his trade, and of *how much or how little these general conditions* affect it, a business executive adapts such data to his individual case.

We will herein briefly discuss the different factors which have been picked out as fundamental by this business barometer service, taking it for granted that they have been carefully studied, and that they are fundamental and have a strong effect on practically every business.

The usual arithmetic chart plan is not used, because the line graph is limited, and only a few lines can be graphically and understandingly handled on one chart. In the dial here given, twelve fundamental factors are shown, and both their temporary, or monthly, movement, and their past record of twelve months compared to five years, is clearly illustrated. This plan allows not only the view of the vital factors as a whole, but the application to an individual business of conditions in factors particularly affecting it. To fulfill these conditions, it was necessary to design a new style of chart divided up into twelve factors, showing both monthly and yearly movements and also comparative averages.

These individual, fundamental factors are arranged in general groups, each of which illustrates certain business conditions, and trends. The first seven factors largely affect *general confidence*. The next four illustrate *general business conditions* and markets. The last factor best pictures *general*

conditions. By combining the per cent of all the factors, the month's changes and also the year's changes against the five-year average are shown. Below the chart are two tables, one showing the



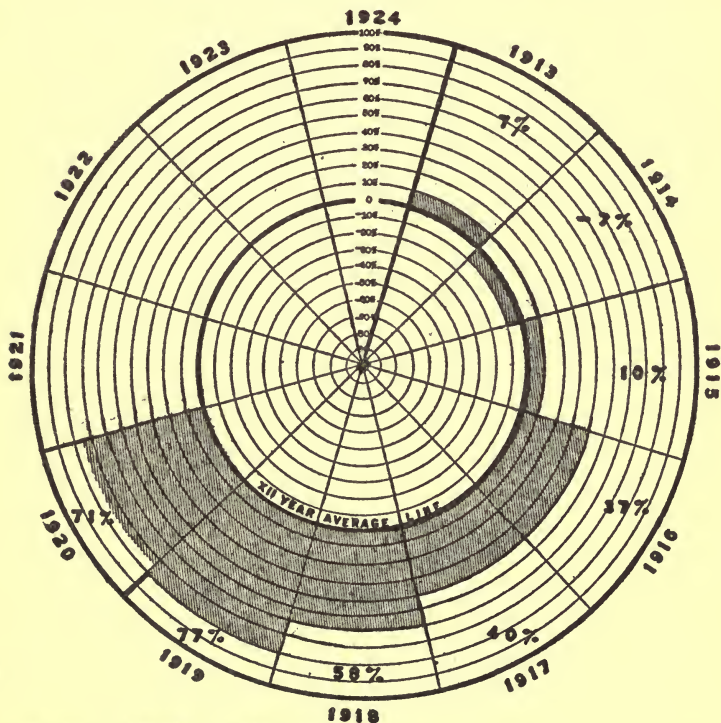
Courtesy of Business Bourse, New York.

FIG. 1.—TWENTIETH CENTURY HISTORY DIALS, SHOWING FLUCTUATION OF COMPOSITE CONDITIONS (1901-1912).

comparison of conditions of each of the twelve factors for the current month as against the same month of one year ago; the other, the twelve com-

bined factors compared to their combined monthly record for the twelve preceding months.

**What the Twelve Factors of the Dial Represent.**—The fundamental character of each of the factors of



*Courtesy of Business Bourse, New York.*

FIG. 2.—TWENTIETH CENTURY HISTORY DIALS, SHOWING FLUCTUATION OF COMPOSITE CONDITIONS (1913-1922).

the dial are apparent to any one studying the same, but the underlying and far-reaching illustrations of their effect on business and buying are not always

so obvious. Therefore, some of the important bearings of these factors upon business in general will be pointed out.

No. I, Railroad Earnings, not only shows the monthly trend and comparative yearly conditions of the *gross earnings* of the railroads of the country, but also illustrates similarly the conditions of the business of the country *moving by rail*, which, of course, constitutes the number of passengers and the shipment of goods by firms or individuals. It is the first of the seven *general confidence factors* shown on the dial, and indicates, by the arrow pointing outward, that the current month's figures were higher than those of the preceding month's dial by 0.4 per cent—a slight upward trend. The averages for the twelve months (including the current month each time), compared with the last sixty months (including the current month), show the gross railroad business with still two 10 per cent segments outside the five-year-average line; that is, 21 per cent over the average yearly gross for the past five years. The arrow and shaded area both show this factor to be a "positive" one in the general confidence group.

No. II, Bank Clearings, obviously illustrates the checking business of the banks. When it is remembered that this largely consists of payments in buying and selling transactions, it is realized that this record shows how the trade winds blow and is an important barometer of general confidence. In the dial chart the arrow shows a minus 4 per cent drop



over the preceding month's record, and the shaded area indicates that the average is a fraction of 1 per cent below the five-year normal. The record, therefore, shows that this is a *negative* factor for the month and for twelve months.<sup>1</sup>

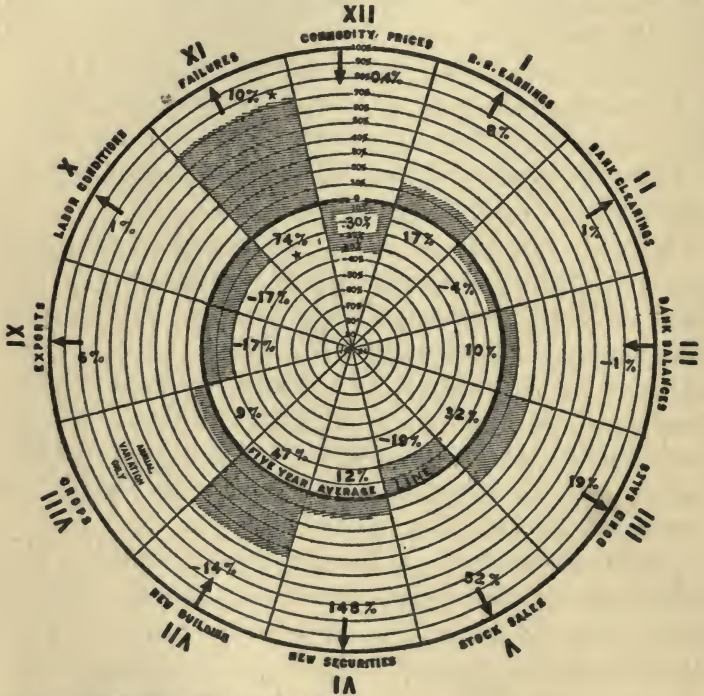
No. III, Bank Balances, is in the positive column, for the month, with the arrow pointing *outward* for +0.2 per cent. The shaded area also shows 16 per cent plus, indicating a more substantial average by that per cent for the twelve against the sixty months—a positive factor and one of importance to the business and financial world.

No. IV, Bond Sales, is a particularly significant general confidence factor, as it is well-known that the best-informed bond-buyers buy on *improving times*; and when bonds are appreciating and obtainable, interest return is *decreasing*. An active bond market, except where they are being thrown over at a loss, is indicative of cheapening money and of partially improving times. The dial shows this factor as substantially positive.

No. V, Stock Sales, although 18 per cent below the five-year average, as shown by the shaded area, is *inside* the five-year line, yet shows the "*bulge*," "not boom," predicted in the dial last spring as due at this time. The stock-market factor is a particularly sensitive indicator of general confidence, even

<sup>1</sup> Debits against personal balances are advocated by some authorities as a correct illustration of this phase of business. The records of this latter factor have not been codified over a term of years and are, therefore, not available for long perspective, or comparison, as are bank clearings.

registering changes in business conditions months in advance. It is one of the factors worthy of careful study by the purchasing agent. The dial shows this factor in the positive column for the last three months with an indication of its continued,



Courtesy of Business Bourse, New York.

FIG. 3.—A CHART OF BUSINESS CONDITIONS AND TRENDS.

steady, though rather slow, improvement as a whole.

No. VI, New Securities, is designated as one of the two general confidence result factors illustrating, to a considerable degree, the trend of general confi-

dence. It is quite generally known that the banking interests, which float the great majority of new issues, put them out only when they have knowledge tending to indicate that the banks and the public are in a mood to subscribe freely. Therefore, the +48 per cent monthly arrow and the +19 shaded area (beside the +42 shown in the table of comparisons with same month last year) make a strong + showing for this important indicator of general confidence.

No. VII, New Building, fluctuates somewhat seasonably, but, as a whole, is an important indication of general confidence in both business and personal affairs. Shortage of housing may affect volume, as building extensive factory additions increased this factor in the war-boom period; but, whenever this factor is expanding, it not only shows general confidence, at least on the part of the building trade, but also has a strong influence on general business conditions and confidence. The dial arrow shows a -5 per cent recession over the big seasonal figure for the previous month, but the twelve month area shows next to the biggest of all shaded areas of the dial and the current month is +24 over the same month of the last year. This is a positive final factor in the general confidence group.

No. VIII, Crops, forms one of the group of the next four factors which strongly affect business conditions, as factors VIII, IX and X form the bulk of the market for all commodities handled by business. If the crops are favorable, it follows that the

farmer's buying power will be big and will help "business conditions," and the reverse is true where crops are poor. At this time there are no regular, reliable crop statistics which can be used for *monthly change* average, so only yearly changes are noted on the dial, but crop conditions are covered in the discussion of the factors; conditions are now only "fair," with prices unsatisfactory, making a negative showing.

No. IX, Exports, is coming to be generally recognized as a big factor in business conditions, as the sending abroad of our surplus merchandise has a great effect in allowing the balance to be sold at home at a profit. Therefore, the foreign, together with farm and labor purchasing-power, are the deciding factors in business conditions. Exports, although below the five-year high average, are fairly active with a +35 per cent in the year's changes table over the same month last year. This factor is fairly favorable.

No. X, Labor Conditions, represents employment which, in turn, determines the buying power of this large class, constituting one of the big backgrounds for business. The arrow shows slightly increased employment, but the shaded area shows that employment is—19 per cent below the five-year average, and also shows that the third big "business conditions" factor is in need of improvement, indicating, or proving, as you prefer, the unsatisfactory condition of business and that its improvement can be coincident only with the betterment of these three



big factors which underlie its very existence: the *purchasing power of the farmer; labor conditions; and foreign trade.*

No. XI, Failures, is designated in the dial as the business conditions result factor, as failures most truly mirror the condition of trade. When trade is ailing, or even "convalescing," the failure "temperature" is high, and the arrow and shaded area of this factor are therefore very important, as they indicate the condition and trend of health in the business body. The shaded area shows that business, as a whole, has been very sick for the past twelve months—61 per cent more failures than the average for the past sixty months. The monthly arrow, however, shows 5 per cent less failures than in the preceding month, which trend, *when maintained for two or three months*, indicates definitely that business conditions have "turned the corner."

No. XII, Commodity Prices, is placed as the final and most important factor in the dial, because the condition of commodities directly touches a larger number of the people, in and out of business, than any other factor. It, in fact, more directly and conclusively indicates *general conditions*, than could any other factor. In the last few dial charts, this was forcibly brought to the public's attention for, since the arrow of Factor XII on the dial started again to point upward (outward) in July, 1921, business "found itself," and, as the commodity factor remained positive month after month, it became more and more stabilized. The—33 per cent shaded area

of this factor evidenced the serious business ills of the previous twelve months, which may be expected to continue to have its effect on general conditions until it gradually recedes, as better months overcome the bad performances of the past, and until this shaded area again appears outside (above) the five-year average line. When this occurs, general conditions again will have reached the only practical "normal"—an *average* over a *reasonable* term of years, not too long to lose its relativity and effect, and not too short to take into account and reflect the averages and swings of a business period in which underlying changes have not been too great.

In respect to the ups and downs of commodity prices, properly illustrating general conditions, it has been pointed out that a 33 per cent drop in prices from the abnormalities of inflation was beneficial, but a fall in business temperature did not make the business patient any stronger while the "fever" was being reduced; business *felt sick* and *was sick* during this necessary process, and, as illustrated on this chart, is only convalescing and gradually regaining its average strength and vigor. We may all decry rising commodity prices, but when they are going up there is no doubt that general conditions are good, *at that time*, and will continue to be so as long as prices continue ascending, and business and buyers may act accordingly.

The above reasoning does not aim to advocate inflation, or advise against proper deflation, but merely points out the effect of increasing or decreasing

prices on conditions in general. A stability around "normal" is, without question, the ideal condition in commodity prices for the stabilization and "long pull" benefits for general business and personal conditions. This factor is a most important one for the purchasing department to consult in its estimate of general conditions. •

**Composite Monthly and Yearly Changes.**—It is always well to take a "consensus," or bird's-eye view, of the general situation, in addition to examining the details. This the dial recognizes in the composite figures of all twelve factors, showing the monthly change of all factors, +8.0 per cent and the yearly composite conditions of the twelve factors, -1.1 per cent.

It is often valuable to get the perspective as to what was doing at *this season, or month, one year ago*, and thus allow comparison with relative conditions in an individual business, or weigh plans proportionately as to how some underlying business factors, or average of factors, show as to proportionate position now and then. This comparison can be made readily from comparative tables, such as are shown at the bottom of the dial.

On the accompanying twentieth century history dials are tersely analyzed the general business record and trend all the way back to 1900, which should be valuable in studying long swings.

## CHAPTER X

### LEGAL SIDE OF CONTRACTS

**Need for a Knowledge of Contract Laws.**—Broadly speaking, laws are rules of conduct established by an authority, statute or decree, controlling the behavior of those individuals residing within the community or state in which such rules may be enforced. Primarily, it is the business of the lawyer to decide what is legal and what is illegal. However, it is not only possible, but essential, for the business man to possess a basic knowledge of business law. All business endeavor must be built upon *legal* statutes and practically all business law is built upon contracts. All work of buying has, as its basis, an oral or written contract.

It is, therefore, of paramount importance that the purchasing executive, whose ambition it is to advance in his profession, inform himself as to his rights and liabilities and the rights and liabilities of others in all matters pertaining to the purchase of materials and supplies. With this knowledge, he will effect a saving for his concern in legal fees and litigations, and will be able to enter into a contract with the seller that will hold. The signature of an authorized purchaser affixed to a contract binds the



authorizing company for the amount of the contract and the stipulations therein. Knowing this, the wise purchaser will make it a point to know, also, the essential requirements in forming a contract; when contractual relations actually exist; when and how an agreement may be canceled; when the seller may be forced to live up to his part of an agreement; etc., etc.

Especially in after-war times, when strong temptations arose in a falling market, to cancel and dishonor contracts, has there been need of basic legal comprehension by purchasing executives.

**First Requirement of the Purchasing Executive.**—There should be no need of emphasizing, or even of mentioning, the legal requirement that all documents must be read carefully before signing. Yet this simple provision is so frequently violated by purchasing executives and business men in general that attention is called to this point. Ignorance of the law is never accepted by the court as an excuse. The business man who is capable of entering into contractual relations is assumed to be capable of knowing all conditions contained in the agreement he has signed. Ignorance of those conditions, providing they have been clearly stated in the body of the contract, does not excuse either party to the contract for failure to perform his part of the agreement as stated in the contract. If this were not so, the whole framework upon which law is built would fall under the worthlessness of contracts. The United States court, in deciding a leading case, holds

that "a contractor must stand by the word of his contract, and if he will not read what he signs, he alone is responsible."

In a case in a western court where a party to a contract endeavored to "wriggle out," the judge told the defendant to "meet his contract like a sport." The standards of business honor as well as the principles of law are against "welching" on a contract, no matter what the provocation, whether of sheer self-interest or of negligence in grasping the full provisions of a contract. In China, large merchants do millions of dollars' worth of business on oral contracts; they consider their word as sacred as a written contract.

**Law of Contracts.**—A contract is an agreement between two or more parties by which reciprocal rights and obligations are created. One party acquires a right, enforceable at law, to some act or forbearance from the other who is under a corresponding obligation to thus act or forbear. A contract, to be binding and enforceable at law, must contain the following essential elements:

1. A certain thing to be done or not to be done must constitute the subject matter.
2. There must be a meeting of the minds of the parties upon subject matter and terms, with mutual obligations, and usually to be performed within a specified time.
3. There must be a consideration.
4. All parties must be competent to enter into the contract.

Generally speaking, all contracts which are made between two competent parties for a proper consideration, without fraud or imposition and for lawful purposes, are enforceable at law. The parties' consent must not be the result of fraud or imposition, or the contract may be avoided by the party imposed upon. The acceptance of one party must meet the offer of the other party according to the terms offered.

**The Consideration.**—A contract is a bargain or agreement between two or more parties, insuring good faith in the making of a promise. A promise is a contract only when given in return for something accepted in consideration of that promise. Therefore, the giving of the promise and the consideration must be simultaneous. A promise given before the consideration merely constitutes an offer.

A consideration is defined as something of value that is either received by one party or given up by the other; a forbearance or detriment or a giving up of something one is not bound to give. No contract is enforceable at law unless it rests upon a consideration, but the court of equity does not concern itself with the adequacy of the consideration, so long as it is neither fraudulent nor an imposition upon one of the parties. The promisee must give something of more or less value for the promisor's undertaking, but it need not be anything obviously for the promisor's benefit. His acceptance shows that he sets some value upon it, and that it is of some value, either expressed or implied, is all that the

court demands. The consideration need not be anything capable of delivery or of possession. It may be a promise to pay money or to deliver goods, or it may be to do work or otherwise to act, or not to act, in some specific way.

Contractual relation does not exist between the contracting parties until the giving of a promise in return for something accepted, in consideration of that promise.

**Meeting of Minds.**—The courts have ruled that there must be a meeting of the minds of the contracting parties else there can be no contract. Acceptance of an offer constitutes a binding contract, providing that acceptance is in accord with the offer, in subject matter in terms. A conditional or qualified acceptance is only a new proposal and, as such, must in turn be accepted in order to form a contract. In case of the failure of the acceptance to correspond with the offer due to misinterpretation of the subject matter or terms, no contract has been formed. There are many cases in the court records wherein one party to a contract has brought suit against the second party for failure to fulfill his part of the contract. The evidence in a large percentage of these cases shows misunderstanding of the subject matter or terms. The law says that, in the absence of precise agreement, no contract exists and, therefore, the party being sued is not liable to damage for failure to perform. In all such cases, the court takes into consideration the original true intentions of the parties and, if the offer does not ex-



press the intentions clearly and correctly, relief from the mistake is given or the faulty document may be judicially rectified.

The purchasing executive who sees to it that his offers are so worded as to be impossible of misinterpretation by reasonable men will save his firm from frequent losses due to mistakes. The seller who makes sure that he understands the true intention of the purchaser before accepting the offer will be comparatively free from expensive suits resulting from misunderstanding. Both parties to the contract should use simple language and should refuse to accept contracts containing expressions and phrases not fully comprehended.

**Communication of Acceptance.**—It is the custom of some concerns, whose system of record requires it, to demand a written acceptance of all offers. Generally, in such cases, a form of some sort is inclosed with the offer to buy, suitably spaced for the seller's acknowledgment. But an offer may be well accepted by any act clearly referable to the proposed agreement, such as shipping all or part of the goods mentioned in the offer and the forwarding of the bill of lading or invoice. Further communication is not required as a matter of law.

Where a seller offers goods before there is a binding contract, there must be an acceptance. Unless especially directed as to the method of communicating acceptance, the acceptor may mail or telegraph his acceptance.

The legal principle deciding the question of how

long an offer is open in the absence of a time limit for acceptance hold that a *reasonable* time may elapse. What is considered a reasonable time is decided by the facts in the case. An oral offer made without setting a time for its acceptance is considered as having lapsed with the separation of the parties without acceptance. An offer, made by telegraph, implies immediate acceptance by wire, unless otherwise stated. An acceptance requested by return mail does not necessarily mean the very next day but on the day of receipt of the offer.

The most satisfactory method for all buyers and sellers is to state, on all offers or letters concerning the transfer of materials, the date upon which acceptance must be made.

**Competence.**—The law requires that all parties to a contract must be capable of entering into contractual relations. Business law requires that the parties be executives, or authorized representatives of the executives, of the respective companies desirous of forming contracts with each other. The purchasing executive should be, and in most modern business houses is, the authorized representative of his firm in all matters relating to the buying of materials and supplies. There are, however, even in progressive houses, purchasing agents who are dependent upon the signature or approval of some one “higher up” for the validating of all contracts above a certain stipulated limit of expenditure. With the advance of the purchasing profession such hampering of the man in charge of the purchasing

department is gradually being rectified, and contracts, even in discussions with the managing directors, are signed by the purchasing executive.

Many of the larger corporations whose purchasing executives are burdened with more work than is humanly possible to accomplish, authorize the assistant purchaser to sign certain classes of orders; but even then it is customary for him to sign the name of the purchasing executive instead of his own. The assistant, as a rule, takes complete charge of the purchasing department in the absence of the purchasing executive, but his authority to sign orders remains in the hands of the real head of the department, or some one "higher up" whose approval should be obtained.

**Validity of Oral Contracts.**—Some purchasing executives have an exaggerated idea of their safety, so long as they do not put their contracts in writing or enter into any communication about them. The purpose of the written contract is to make the terms and conditions certain. Oral testimony is not allowed to vary written contracts in any way. Contracts in general are equally valid whether made orally or in writing. A partial payment offered by the purchaser and accepted by the seller, or representative of the seller, binds the seller to a verbal agreement, providing the payment is made in currency and with a clear understanding between the parties as to the purpose of the money paid.

Certain classes of contracts are required, in most

states, to be attested by a note or memorandum in writing, signed by the party or his agent sought to be held liable. Some of the provisions, which are adopted from the Old English Statute of Frauds enacted during the reign of Charles II, vary in some states, but the following contracts very generally are required to be attested:

1. Contracts by their terms not to be performed within a year from the date of the making thereof.
2. A promise to answer for the debt, default or miscarriage of another person.
3. Contracts for the sale of goods above a certain value, unless a portion of the price is paid or a part of the goods has been delivered. The required value of the goods sold varies in different states from \$30 to \$500. In a number of states where no such provision exists the amount is \$50 which is the required value of the goods demanding written contract under the Old English Statute of Frauds.

**Failure to Perform Agreement.**—During the World War, when unprecedented conditions obtained, sellers were prevented from filling their contracts through lack of men and materials; shipments refused by carriers or diverted from destination by the government; precedence of war orders, etc. The law provides relief for a contracted party whose failure to perform what he has agreed is by an “act of God or the public enemy.” This law says,



in effect, that a party is generally excused for the failure to perform what he has agreed, only by agencies beyond his control, except in cases involving a personal element in the work to be performed, such as the rendition of services when death or sickness of the party contracting to perform is a valid excuse. Sellers, and there were many of them during the war, were forced to take advantage of this protective clause. In case of suit, the court ruled that the purchaser was not entitled to damages where reasons for failure were clearly beyond control.

In cases where the carrier refused to accept shipments, the seller was not held to blame for his failure to deliver goods. Neither was the purchaser whose order read f. o. b. shipping point, bound to pay invoices merely because the goods were ready for shipment. The purchaser's liability begins only upon the acceptance of the shipment by the carrier. With the rendering of the bill of lading to the seller by the carrier, the seller is said to have fulfilled his part of the contract and the shipment belongs to the purchaser from that moment.

If the purchasing company has mailed its check in payment of the invoice accompanying the bill of lading, and the goods are diverted from their destination for government purposes, the seller, as a rule, is required to return the amount of the invoice to the purchaser. He may, if he desires, enter into communication with the purchaser concerning the replacement of the shipment, but legally he is re-

quired only to return the money paid for the goods and the contract is considered as executed. In cases where contracts are for the performance of work upon a specified object, its destruction without the fault of the party sought to be held liable is sufficient excuse for the failure to perform what has been agreed. There are, of course, exceptions to these rules.

During the war, there were many concerns, some of them supposedly dependable sources of supply, who took advantage of the protective clause in their contracts without true cause. It frequently happened that these concerns, whose contracts had been made before the upward trend of the market, refused to make shipments at the lower price, offering, as an excuse, war orders, diverted shipments, etc. Purchasing executives, having all they could do to keep their factories supplied with materials, could not take time to enter suit against firms whose policies allowed of their hiding behind a legal phrase. Those who did take their cases to court found that the firms repudiating their contracts were so well fortified by the wording of such contracts that breach was difficult to prove.

With the cancellation of war orders and the return of something like normal business conditions, however, purchasing executives were overwhelmed with offers to sell materials and supplies. Referring to their revised lists of dependable sources of supply, the purchasing executives gave, and will continue to give, preference to those sellers whose

record of fair play and upright dealing remained clean during the war.

**Misrepresentation.**—It is seldom possible for the purchasing executive to know all the facts about the materials he is called upon to purchase. Reports from the manufacturing department on tests, analysis, performance, etc., of samples are helpful and frequently essential, but even expert tests do not give all the facts. The purchasing executive must, therefore, and as a rule he reasonably may, take the facts from the seller, verifying these facts wherever possible.

Misrepresentation of facts by one party is generally considered as an imposition upon the other party, and, as such, enables the one imposed upon to avoid the contract. An untrue statement made by the seller, even though he believed it to be true at the time of contracting, is frequently classed as misrepresentation. Inadvertent omission of a material fact is, in some cases, misrepresentation. Misdescription of property on sale, without fraud, may be a matter for compensation or for the setting aside of the contract, depending upon the importance of the point wrongly described. When the validity of the contract is conditional upon the existence of any matter of fact, and the fact is not as stated, the contract has no force.

The misrepresentation of facts is important at all times but especially so in the matter of purchasing goods through samples. All samples should be subjected to analysis or physical tests, and goods

received on order should be submitted to the same tests and carefully checked with the report on sample. There must be no substantial difference between shipment and sample. The validity of the contract between the purchaser and the seller is conditional upon the goods received being neither higher nor lower in quality and in no way different from the sample submitted. If these conditions are not fulfilled, the contract has no force. In many cases the court considers the failure of the seller to perform his part of the agreement a matter for compensation to the purchaser. A recent case in a western court in which goods delivered were not up to the sample analysis was decided in favor of the purchaser and the burden of the failure rested upon the seller who was ordered to pay damages.

**Cancellations.**—Legally, a contract that has been properly executed under the law of contracts, may not be canceled except upon mutual consent, and the purchasing executive who repudiates his contract is liable to damages. It is the business of the courts to hold the contracting parties to the terms of their contracts rather than to devise ways by which the agreement may be avoided. An offer to sell or purchase does not become a contract until it has been accepted. A revocation of an offer must be communicated before the offer is accepted. After its acceptance all parties are bound to carry out their parts of the agreement according to the terms of the accepted offer.

In actual practice, however, a purchaser seldom



has any difficulty in canceling his purchase order. As a result of the ease with which orders may be canceled a great many purchasing executives place orders indiscriminately with the intention of canceling them before shipment is made. This is frequently used as a method of disposing of a persistent salesman. During periods of delayed shipments and difficulties arising from conditions such as obtained during and immediately after the war, orders are at times placed with a number of sellers for the same materials. The intention of the purchasing executive who does this is to accept the first shipment that is received and to repudiate his contracts with the other sellers. Obviously such practices are bad, and if brought to court would be decided in favor of the seller in most cases.

Much agitation has followed upon the extensive cancellation of contracts in after-war times and definite steps to sharpen the contract-keeping sense of the business world have been taken. The example of several large firms in taking enormous losses rather than break or cancel contracts on technicalities has done much in this direction.

**Damages.**—One of the great difficulties experienced by lawyers in the trial of contract cases is that of ascertaining and proving the damages resulting from breach of contract. Such cases must be decided according to the evidence presented in each case and harmony of decisions is impossible. The parties may agree, in their contract, upon a sum to which either may be entitled as a compensa-

tion for a breach and the courts will enforce such an agreement. This is known in law as liquidated damages. If, however, the sum so designated is designed, not as a compensation to the party injured, but as a penalty to be inflicted, the courts will not uphold it.

When the purchasing executive repudiates his contract after goods are finished, or nearly so, the seller has several courses open to him in case he desires to refuse to accept the cancellation. Most of these, however, are too involved to set down here, as there are many elements in each case which require analysis by lawyers. One course that may always be followed by the seller upon the purchasing executive's refusal to accept goods, is to store or retain the property for the purchaser and sue him for the entire amount of the purchase price. At times, he may keep the property as his own and recover the difference between the market value at the time and place of delivery and the contract price.

Even the most painstaking of purchasing executives will, at times, overlook some technical point in contracts to which his signature is affixed, or in acceptance of which he has returned a signed formal sales slip furnished by the seller. But a general knowledge of the legal side of contracts cannot but prove an aid to him in discovering these points. Many a purchasing executive has saved himself an uncomfortable half hour in the office of an attorney by his knowledge of the fundamental rights and liabilities of the parties to a contract.

## CHAPTER XI

### ETHICAL SIDE OF PURCHASING

**Function of Ethics in Business.**—Ethics is the science of human inter-relationship. As the great majority of people have more business relationship in modern life than any other type of relationship, it has become vitally important that these relationships be made thoroughly ethical. The practical purpose of this is the reduction of friction, the development of higher standards, the saving of time and energy and consequently greater business speed, safety and productivity. This can be accomplished by common reference to a single form, or accepted standard, of ethical judgments.

Ethics are usually confined to the particular field of human character and conduct commonly known as moral principles. An action to be ethical must conform with the principles of right in the abstract. But the human race's experience with warfare and sport has introduced the element of "fair play." It must be fair as well as honest; it must not only conform with the law but must enter into every minute circumstance connected with the interests of all parties directly or indirectly concerned in the action. It must conform with the "rules of the game" as gentlemen play it. Men, in general,

think of their own and each other's characters as good or bad; of their conduct as right or wrong. But we now know that much of human conduct is in a gray zone which becomes debatable, uncertain ground, unless detailed ethical standards are worked out, just as rules for tennis or baseball are worked out. Only in this way can antagonisms, abuses, favoritisms and inequalities be avoided. If there is no clearly defined standard of conduct, men will often resort to equivocation and erroneous action.

Not only unprincipled men, but men whose moral consciousness is well developed, but whose shrewdness and keen desire to "get the best of the bargain" overrules their better judgment, fall prey to this situation. As in any clean athletic game, disputes among players are deplorable, and usually disappear when codes, rules and standards are clearly set up, so men will not then try to see what they can "get away with," because they value their professional standing, which is affected by infractions of the trade code. In the Roosevelt days "big business" had no well defined codes; to-day things that were freely done then in business are illegal, and many others are simply held unethical according to modern standards.

It is a healthy tendency when such codes are developed, and a "sporting" attitude of fairplay, as well as an appreciation of the equal rights of all parties in a transaction, are considered. A very illuminating and stimulating exposition of this new



attitude will be found in *The Great Game of Business*, by J. George Frederick (Appleton, 1919).

**Usefulness of Ethical Standards in Business.**—The ancient adage, "Caveat emptor" (Let the buyer beware), indicated the existence of a stultifying and costly mode of business operation. Unless high-principled business men associate themselves continually in favor of clean trading, the cynical motto, "Do others before you are done by them," will gain predominance. Business is not yet out of the period when it has popular odium and suspicion attached to it, and constant insistence upon high standards is important. Those who have one set of principles for their personal life and another set of principles for daily conduct of business are now distinctly the enemies of good business. It is no longer a question of honesty as a best broad policy—it is a question of being aggressive and meticulous to see that even impressions or suspicions or possibilities of ethical misunderstandings be removed.

A practical part of the machinery of ethical standards in business is the law. Crude legislation has harmed business, but is now being cleared up through judicial decisions. As business revolves largely around contractual relationships we have contract laws which, after a great many court cases and decisions, have well worked out the rights of parties to a transaction. The Federal Trade Commission has worked out, as a result of complaints, various decisions and judgments which authoritatively indicate what, under special circumstances, is

ethical and just. Various professions and trades have worked out "codes" and general business organizations have gone on record with their consensus of opinion. The example of high-grade houses has also set precedents and led the way; so that the usefulness of ethical standards and insistence upon them is now thoroughly proved.

**Purchasing Ethics and Purchasing Policies.**—Probably no branch of business has been so beset with temptation and pressure on the ethical side as the purchasing branch. A most notable housecleaning has taken place in purchasing ethics in the past several decades, and purchasing is now taking on the character of a distinct profession, with a professional pride in ethical standards. A firm that countenances questionable conduct on the part of its purchasing executive soon becomes known as generally lacking in principle. A purchasing executive who indulges in unfair methods of buying, or methods verging upon sharp practice in his dealings with the seller, gives the impression that his concern is operating on dishonest or questionable policies. The purchasing executive who succeeds where others fail must himself be honest and of high principles. This makes it easier to be fair in his dealings with his source of supply.

The correct view of the purchasing executive is to feel that it is his duty to procure for his firm the greatest value for the money expended, but at the same time to feel a responsibility for the reputation of his employers. There is a difference be-

tween getting one's money's worth and getting the best of a bargain. No modern purchasing executive allows his desire to save money for his firm to lead him among the byways of underhand methods. To keep his business transactions unfailingly up to a high standard, he will require himself to give attention to a square deal for the firm he buys from, in addition to the interests of his own firm. This has no purely philanthropic aspect; he is not required to act as nurse to the vender. But it does mean that, upon the principle of the law of averages, a uniformly gentlemanly treatment of the vender will result in purchasing advantages of very material kind.

**Need for Laws to Enforce Ethical Methods.**—Codes of ethics as drawn up by various trade organizations, business associations, chambers of commerce, etc., throughout the country have done much toward differentiating between fair and unfair practices. But codes of ethics influence only those minded to be ethical. For the others, laws must be passed. It must be made unlawful for a seller to hide his dishonesty under cover of a trade custom or to excuse his unfair practices by pleading that such and such has always been done. For this purpose the Federal Trade Commission was created in 1914. Under the commission's organic act: "All unfair practices are hereby declared unlawful."

Before the creation of this commission it was practically business suicide for any manufacturer or seller to conduct his business along absolutely ethi-

cal lines, because of the diversity of trade "evils" known as trade "customs" which operated with impunity. For example, it was formerly a custom in the sponge trade to "load" sponges with salts, glucose, or other heavy material, thus increasing the weight of the shipment and decreasing the actual quantity of sponges delivered to the buyer. Obviously, a marketer of sponges who did not "load" his shipment must deliver more sponges to the pound than his less ethical competitors and at a price that would compete with the price they were asking. Undoubtedly there were many marketers of sponges who considered the practice an imposition on the buyer, but it was the custom of the trade to "load" sponges and all sellers were compelled to practice it. It would have been useless for a few dealers in the sponge trade to refuse to follow the custom. A code of ethics, agreed upon by every marketer of sponges, would have been equally useless, for there would always be some one firm, or some group of firms, who would disregard the code. The custom had to be prohibited by law, and it was the honest men in the trade who asked that such a law be passed.

Similarly, there has been much controversy over hundreds of moot points of ethics which are now crystallizing into laws, such as the Pure Food laws and others.

**Past Practices against the Purchasing Executive.**  
—Before the creation of the Federal Trade Commission, the purchasing executive had no redress un-



less his difficulties arose through some `unmistakable contractual breach on the part of the selling firm. Prior to 1914 the average purchasing executive was not the scientific analyst that he is to-day. He could be tricked by all manner of subterfuge. Articles were misbranded, either as regards the materials or ingredients of which they were composed, their quality, their method or place of manufacture or origin; or, by "inferential" misbranding, that is, by the use of trade-names or descriptive terms which simulated trade-names or descriptive terms of unadulterated or genuine goods. Trade boycotts or combinations of traders prevented the purchasing executive from obtaining goods through the channels he chose. He was sold rebuilt articles as new products. He bought one article at less than cost and unconsciously paid the difference on some other article sold at the same time. Market conditions were misrepresented to him by salesmen overanxious to secure his order. His employees, or employees in another department of his firm, were influenced to specify certain brands of goods because of the lottery premiums or other gratuities offered to them, etc. The list of unethical methods of obtaining business from the buying concern is endless.

#### **Effect of Specialized Buyers upon Sales Methods.**

—To-day, however, the purchasing executive has more definitely mastered his profession. He knows what he wants and why he wants it. His specialized knowledge of markets, materials and methods of manufacture protect him from mistakes. He is pro-

vided with laboratories which test samples of proposed purchases; he has the means whereby he can assure himself beyond all question that he has received the desired article. He makes his purchases on merit alone and depends upon laboratory and factory reports to corroborate his judgment. Sellers have been quick to recognize the specialist in the buying field and to adapt their methods to the new demand.

For those sellers who are slow to abandon the old unfair practices, the purchasing executive has recourse to the law through application to the Trade Commission for the issuance of a formal complaint against the seller who conducts his business contrary to the Federal Trade Act of 1914. The creation of this commission has had a regenerative effect upon trade ethics. Many trade customs which are not included in the Trade Act against unfair practices have been abandoned by the mutual consent of groups of sellers called together for the purpose of eliminating or modifying trade practices that even "verge upon the unfair." Sellers must, in self-defense, refrain from trickery in obtaining the business of the purchasing executive of the present. It is the belief of professional purchasing executives that it has been their forward march in the purchasing profession that has brought the consciousness of a fundamental moral principle in business to the fore. The seller, the purchasing executive, and the public profit by the changes that are apparent in business methods of to-day.

**Competition versus Corruption.**—Throughout the business world there has been discernible for years a desire to reform business methods. A tremendous impetus was given it by Roosevelt, and the advertising clubs and commercial organizations with their “vigilance” work and propaganda was very epoch-making. This wish for cleaner trading has been built up, subconsciously to a large extent, in the minds of the new type of business men who had a very emphatic sense of practical idealism in business. The “fair field and no favor” attitude was beginning to have its effect both in the selling and buying field even before the year 1914. But developments during the war crystallized the determination of business men to eliminate all unfair practices not only by law but by a liberal education in ethics as well. It is a paradox that, while laws are necessary in order to insure ethical behavior, ethics are essential in persuading men to act within the law.

The basic integrity of American business is unquestionable, but under the terrific pressure of war-time haste and waste every person, from the president of a concern down to the office boy, was imbued with the necessity of keeping the factory running by “hook or crook.” In the majority of cases it was the crooked method that got results. Contracts were broken; prices were boosted beyond all reason; articles for sale were misbranded and adulterated; profiteering, bribing and grafting in all forms sprang up and law and ethics were forgotten. In-

stead of competition we had corruption, and especially the corrupt practice of commercial bribery. This war-time orgy of misbehavior ethically was world-wide in extent and has been superseded by a more sobered outlook.

**Agitation and Laws against Bribery.**—With the return to normalcy, conditions became favorable for the promotion of an even higher morale in business than obtained before the war. It is manifest that commercial bribery is by far the greatest ethical danger still confronting American business men today. In fact, “grafting” has become an international question. The commerce of the world is growing so closely knit that bribery in one country reacts adversely upon other countries. The vital necessity for eliminating this evil is a matter of world welfare and touches all of us. All of the European countries have passed laws against bribery; and it has been hoped that a new association of nations and the new international chamber of commerce will take steps to standardize trade morale the world over.

In our own country fifteen or sixteen states have carried antibribery laws on their statute books for the past ten years or more. But these laws have not been energetically enforced, and the fact that no such laws exist in so many of our states puts our own business men under a severe handicap. The Federal Trade Commission has done much to repress the practice of offering secret gratuities, but the United States Circuit Court of Appeals has declared that the commission cannot exercise its



authority against commercial bribery as an unfair method of competition. A law passed by congress is necessary to make commercial bribery a federal offense in the United States, and, as such a bill is already introduced, and a very active propaganda is being waged by leading business associations in favor of it, it seems at this writing as if it will become a law.

**Moral and Material Aspects of Bribery.**—Undoubtedly the modern purchasing executive and the modern salesman are on a higher plane of business ethics than ever before. Business conditions, years ago, were unspeakable. In the majority of cases to-day, social intercourse between buyer and seller is not a matter of "intensive cultivation of friendship," as it was formerly, but the tactful exchange of courtesies, the getting acquainted for the purpose of talking business. The purchasing executive of to-day may accept the luncheon invitation of a salesman without feeling that the salesman "has an ax to grind." He need have no fear that his integrity is doubted, or that an attempt is being made to influence his buying judgment by "entertainment." He may be reasonably sure that he will not be offered a lump sum of money, a commission, a discount, a valuable gift, or other form of commercial bribery.

Both seller and buyer have come to realize that all merchandise should be sold on its merits and not mingled with any personal understandings or considerations. The whole framework of trade is

built upon the definition of competition as *the striving to gain a particular object by honest means*. The entire theory and practice of advertising are predicated on the assumption that the purchaser is making a free and unhampered choice on the merits of the competing products. Business men throughout the country have become convinced that, both from a moral and a material aspect, bribery is a most costly and useless method of competition, and, they are uncompromising in their antagonism to it in any form, however subtle.

**Commercial Bribery Defined.**—Commercial bribery, as we use the word, “involves a transaction whereby a seller gives something of value to the employee of a customer, or to the employee of his competitor’s customer or prospective customer without the knowledge of the employer, and with the purpose or with the effect, or for the purpose and for the effect, of causing that employee to seek to influence the buying judgment of his employer.” This is on the authority of Wm. B. Colver, U. S. Federal Trade Commissioner, before the Purchasing Agents of New York.

The three tests to apply are these:

1. The giving must be done without the knowledge of the employer.

2. The thing given, or promised to be given, must be of so great value that, *prima facie*, the transaction is for the purpose of influencing the judgment or obtaining the secret support of the employee or purchasing agent.

3. When the thing is of lesser value—and here comes the element of entertainment—whether or not the manner of its giving, or of the promise to give, is such as either to be intended to, or in fact does result in an undue influence upon the judgment or conduct of the employees of the purchaser or the prospective purchaser. If the entertainment is of such a character as to be the “intensive cultivation of friendship” unknown to the employer, then the practice is not good, and modern business men recognize it as commercial bribery and put a ban on it.

**Christmas Gifts.**—The custom of giving expensive Christmas gifts to buyers is fast dying out, but there are still many firms who allow their salesmen expense accounts for presents to customers. Employers have come to expect the holidays to bring gifts to their employees so that the gifts, to all intents and purposes, is not a form of commercial bribery. Under the English law against bribery, it is the condition of secrecy that makes a gift a bribe. Nevertheless, many gifts are made openly which are intended by the giver to influence the future conduct of the recipient, and are, therefore, essentially questionable ethically. There is such a thing as an effort at unconscious bribery; an effort to affect the unconscious mind.

If the spirit back of the gift is one of appreciation of business during the preceding year, there is no ethical reason why the purchasing executive should not accept the gift in the spirit in which it is given. But salesmen frequently take advantage

of the holiday season to send expensive Christmas gifts to their customers or prospective customers. Because of the season, purchasing executives who would not think of accepting a bribe, accept such presents as a matter of course, without realizing that they are obligating themselves to the salesman. Others, of less high principles, make it known to the salesman that, unless such remembrances are forthcoming, the next time the salesman calls he will get no order.

Many purchasing executives are to-day conveying the information to salesmen that they will not accept anything of value at any season of the year, thus forestalling any unpleasantness that might result from the refusal of the gift. The difference between gifts as tokens of appreciation and gifts as bribes is great; but it is often difficult for the purchasing executive to strike a middle course. To do so calls for the exercise of his powers of analysis, his foresight, and his innate common sense.

#### **Purchasing Executive's Duty to His Profession.**

—Although we are told repeatedly that “one swallow does not make a summer,” the popular mind has come to assume that the purchasing profession is to some extent a graft-receiving class. This impression has arisen because there have been instances in which purchasing agents or buyers have been known to accept gratuities from selling firms. Investigations show that the men most susceptible to taking bribes are the minor-plant officials, department foremen, engineers, etc., whose disloyalty re-



acts upon the purchasing profession. To remove this stigma, it is the duty of every purchasing executive to investigate thoroughly the character and conduct of the men from whom he received requisitions for purchases.

Lack of proper supervision and control of men and material, accompanied by ignorance and incompetency on the part of responsible heads of a business, encourage graft. Obviously, the underpaid employee has a greater incentive to solicit graft than one who is paid an adequate salary. On the other hand, it appears unlikely that a confirmed bribe taker will voluntarily forego an opportunity of taking tribute. He must be made to see that the accepting of gratuities makes him serve two masters, and that this cannot be done with justice to either. Manufacturers must rely upon the honesty and loyalty of their employees, but it cannot be doubted that weakness on the part of employers encourages bribery and, in many instances, the entire responsibility of proper supervision of materials falls upon the purchasing executive. For the honor of his profession the purchasing agent must do all in his power to remove the stigma of bribery. For the purchasing executives' own guidance the following rules are given :

1. The purchasing executive shall act in all professional matters strictly in a judiciary manner with regard to any purchases he may make, and his salary shall constitute his only re-

- muneration in connection with such purchases.
2. He shall not accept any trade commissions, discounts, allowances, or any indirect profit in connection with the purchases.
  3. He shall not, while acting in a professional capacity, be, at the same time, without disclosing the fact to his employers, a director or shareholder in any company with which he may have occasion to deal. Neither shall he act as agent, nor in any other way have any financial interest in such a business.
  4. He shall not receive, directly or indirectly, any royalty or commission on any patented or protected article or process used on the article purchased, unless, and until, such royalty, gratuity or commission has been authorized by his employer.

## CHAPTER XII

### ORGANIZATION OF THE PURCHASING DEPARTMENT

**Correct Conception of the Purchasing Organization.**—The purchasing organization must be up-to-date. It must be built upon plans that will allow for expansion or curtailment without reorganization and yet be complete enough to handle the maximum of present-day business with ease and perfection. The greater number of business organizations have grown unevenly from small beginnings. During the war, especially, small concerns, having organizations—sales, accounting, factory, purchasing, etc.—that were sufficient for the business being transacted at the beginning of the war, grew with such rapidity and to such magnitude that their various department organizations and systems were swamped. Many a purchasing executive, who had followed the plan of remembering the names of the firms from which he bought and the prices paid for materials, and trusting to his retentive mind for the greater part of his data, suddenly found himself lost in the overwhelming demands which fell upon him because of war orders.

As with the sales organization, which should be built to fit the full possibilities of sales rather than

the hit-or-miss accident of sales, so with the purchasing organization. It should be designed to help build up the business and to anticipate the future growth of the industry. Even if it is necessary to reorganize the department and to discard the old system entirely, it is essential to provide the organization with proper tools that are capable of expansion. The purchasing organization is like the factory, in that it must have modern equipment with which capable men may work.

**Purpose of System.**—System is the set of tools with which the office employees must work. These tools must be elastic, and adaptable to condensation or expansion. System is largely a matter of records entered in a certain order. The value of records is for comparison. Entries that are not useful for this purpose are, as a rule, superfluous. The present-day tendency is to make records too complete, thus overloading the office with a system, installed, in many instances, because another firm installed it, or for pure love of system and lots of it.

There are, to-day, many efficiency experts, specialists in systematizing, industrial engineers, organization specialists, etc., who are capable of equipping offices with a correct system and of directing the organization of any or all departments. Unfortunately, there are also men who call themselves experts who are incapable of carrying out this work successfully. These are largely responsible for the fact that many small firms are at present tangled up in a mass of red tape from which it will take a



*bona fide* expert to extricate them. There are, too, a great many large firms that are floundering in a mire of antiquated forms and systems long since outgrown, that should have, and probably would have, been discarded at the beginning of business growth, were it not for the fear of falling into the hands of an unreliable type of experts.

To repeat: the purpose of system is for facilitating operation and recording necessary data in the simplest possible manner. All unnecessary data should be eliminated. In weighing the points of the old system, or in considering the new one, the following questions should be asked:

1. What result is desired?
2. What information is necessary to get this result?
3. What is the simplest form in which to record this data?
4. Is the result worth the cost in time and money expended?

Satisfactory answers to these questions are the tests of the value of any system.

**Reason for Different Kinds of Purchasing Organizations.**—The aim of the purchasing executive and his organization under any condition is to buy as cheaply as possible the quality of materials needed by the firm. It is not possible to set down any hard-and-fast rules to be followed in accomplishing this aim, or in organizing the department that is to assist in its accomplishment. The kind of organi-

zation depends largely upon the volume of the business and the amount of the yearly purchases. It stands to reason that the concern spending a few thousand dollars a year does not need the elaborate system or the extensive organization required by the corporation whose expenditures amount to millions.

The character of the purchasing department is also contingent upon the nature of the business. For example, the concern manufacturing castings whose chief requirements are pig iron and sand will not need a large purchasing organization, or even, unless the business is very large, a special purchasing agent. The buying of supplies for the foundry may be attended to by some member of the firm with the aid of a stenographer or a bookkeeper. The need of a large corporation maintaining warehouses and using the same variety of articles year after year may be anticipated by the purchasing executive and purchased in quantity on a favorable market. On the other hand, a contracting company that buys supplies only for the filling of the contracts on hand requires a large organization for the purpose of following up orders and seeing that materials are delivered at the time and place specified.

It may be seen, therefore, that two important factors enter into the organization of the purchasing department and the selection of the correct system of buying materials and supplies—the size of the concern and the nature of the business.

**Different Methods of Buying That Require Different Types of Organizations.**—Broadly speaking, there are as many different methods of buying as there are different types of businesses. The nature of the business, seasonal requirements, etc., control the size of the purchases, while the size of the purchases governs to a large extent, the method of purchasing.

It is not feasible to prescribe any one method of buying, as there are eight widely differing methods calling for systems and organizations of widely differing magnitude.

1. Contract buying, or buying direct in large quantities from a small group of large producers.
2. Buying direct in smaller quantities from a larger number of producers whose offices or branch offices are close to the factory using the materials.
3. Buying in such small quantities as to necessitate dealing with jobbers only.
4. Buying through brokers who represent dealers or jobbers.
5. Buying through salesmen only.
6. Buying by mail through samples and analysis.
7. Buying on the open market (shopping).
8. Buying through bids submitted.

It is possible also for the purchasing executive to use more than one of the above methods, depending entirely upon the extent of the manufacturing

activities of the business and the quantities of the article needed. For example, a candy manufacturer may contract for sugar, buy condensed milk through a broker, secure bids on boxes, and purchase flavoring extracts either from a jobber or by mail through samples and analysis.

**Analysis of the Purchasing Organization.**—The purchasing executive upon whom falls the duty of organizing his department should consider carefully the following important points and make sure that it is:

1. Capable of handling the volume of business that passes through the department without overexertion and without waste of time or energy.
2. Sufficiently compact to keep every worker at high tension during office hours, yet adequately elastic to allow for an unexpected rush of business.
3. Provided with competent management and complete information as to aims and policies.
4. Operating with a system that does not entail delay through an excess of red tape.
5. Supplied with all data necessary for the keeping of complete records, etc.
6. Not hampered by records so complicated as to require time and labor exceeding the importance of the data.

The purchasing executive should analyze his organization in detail and should also see to it that the following particulars are made clear to each



worker from the executive down to the least important member of the organization:

1. The authority, responsibilities and duties of each worker should be clearly stated.
2. There should be no possibility of doubt as to who is held responsible for each specific detail.
3. That each worker knows to whom he or she is to report.
4. That each worker knows, in a general way, the duties of the other workers in the organization.
5. That there is no overlapping of duties and authority.
6. That the work of one group is not duplicated by any other group.

**Value of a Definite Principle behind an Organization.**—The executive or his chief assistant should watch closely the inner workings of his organization, ascertain the reasons for dissension and misunderstanding, hold frequent conferences with those employees who seem to require advice, take care that accidents or mistakes are rectified by those workers upon whom the responsibility rests, and endeavor in every way possible to keep the wheels of the organization running smoothly. Workers should be encouraged to take their difficulties to the proper authority for the purpose of having them cleared up, and should be made to feel that these difficulties are worthy of discussion. The opportunity to “talk over” certain puzzling points will, in itself, serve to put the worker on his or her metal and in

the majority of cases the knowledge that it is possible to gain an audience with the man in authority over that particular department is all that is necessary to make the worker decide the question for himself.

The value of a definite principle behind an organization is the fixation of responsibility. Each member should be made to feel that he or she is an important cog in the machinery of the department; that the firm appreciates his or her work when it is well done, but that another worker can be found to do that work in case the present employee becomes careless or lax; and that the firm is absolutely fair and gives credit where credit is due on the basis of merit alone.

#### **Value of Charts for the Fixing of Responsibilities.**

—One of the simplest and, at the same time, one of the most efficacious methods of fixing responsibilities is that of organization charting. This method may be said to be essential in the large organizations which have outgrown their original systems, while it is advisable even when the firm is small. The chart brings before the eyes of each worker a picture of his place in the organization and makes it possible for him to visualize his duties in relation to the duties of others.

It is to be hoped that the advance of purchasing as a science will bring forward the purchasing organization specialist. Until the advent of such a technician, however, it is advisable to secure the services of an efficient organization counselor of

known dependability. A chart-maker can draw up a chart of the organization as it stands, but, having decided to call in an outsider to assist in making possible a visualization of the duties and responsibilities of each worker, it is well to go a little farther and find out wherein the present system and organization may be improved.

The technician in general organization is fitted to take a survey of the purchasing department, or of any other department of business management, and to advise whether or not the present form is best suited to the situation. He will analyze the department, draw up a rough chart showing the organization as it stands, with crisscrossing of lines of authority and duties, pointing out the lost motion that results. He will then draw up a correct chart of the organization as it should be, with the duties of each worker clearly defined and the lines connecting each function with the one to which it rightly belongs.

**Charting the Purchasing Organization.**—For the benefit of the purchasing executive himself, it is well worth while to call in the organization specialist in order to ascertain the efficiency of his office system in comparison with simpler or more modern systems. The chart given in this chapter is that of the logical division of necessary data, grouped in the order of their importance, etc. No attempt has been made to show the combination of divisions in the case of limited office force, or the subdivisions when the volume of business necessitates many clerks. Only

the data groups are shown divided according to importance, and placed under the proper responsible head. The purchasing executive reports only to the managing directors. The assistant and the chief clerk report direct to the purchasing executive. The bulk and type of the business must necessarily control the divisions and subdivisions of these data-groups as well as the subheads of these divisions.

It may be seen in the chart that the bulk of the details pass through the hands of the assistant and chief clerk before reaching the purchasing executive himself. In the opinion of the writer, corroborated by purchasing executives all over the country, the laboratories belong in the manufacturing department and reports on samples tested are recorded by a clerk in the purchasing department. The stock records should be made in duplicate, one copy of which is filed with the purchaser, the other kept in the stores department. The traffic division is essentially a part of the sales department and serves the purchasing department only in an advisory capacity and for the purpose of tracing delayed shipments, adjusting claims, etc.

**Matters for the Personal Attention of the Purchasing Executive.**—The demands upon the time and energy of the purchasing executive are manifold and diversified. Briefly, the duties contingent upon the position are:

1. To formulate purchasing policies that agree with the policies adopted by the firm and to see



to it that these policies are understood and adhered to.

2. To represent his department in all consultations between executives; to report to directors, owners, etc..
3. To see as many salesmen as is possible and to treat all callers with invariable courtesy.
4. To look after all large orders and important contracts from their conception to their completion.
5. To direct the placing of all orders, large or small.
6. To oversee, in a general way, all details pertaining to the purchasing department.
7. To oversee all details pertaining to the relations of his department to other departments.
8. To keep in close touch with all activities of all departments of his business in their relation to purchasing and in their relation to each other.
9. To keep his fingers upon the pulse of his organization through direct contact, reports and conferences with his assistants.
10. To study requisitions for supplies, with close attention as to quality, quantity and intended use. Also with attention to duplicate, or unnecessary, orders.

Perhaps the most important function of the purchasing executive is the selection of assistants and members of his organization. The success or failure of the purchasing department depends primarily upon the ability of the executive to analyze men, to

estimate their capacity for work and to choose sub-heads for each division of his department with an eye to their ability to manage officeworkers. It is generally conceded that the salesmanager must know mental state and the factory manager must know men and machinery. But the need of the purchasing executive to know all three plus markets and materials is usually overlooked. The most important of these five factors is a knowledge of men. Very often it is the assistant who selects the lesser workers. In this event the importance of a proper selection of the assistant purchaser cannot be over-emphasized.

**The Duties of the Assistant.**—It is a difficult task to assemble facts, make decisions, etc., without the increased factors entering into the bigger and broader view of purchasing as it is to-day. Not only is a knowledge of markets, materials and men essential, but a knowledge of organization as well. The power of leadership is quite as necessary to purchase management as it is to sales or factory management. The purchasing executive who lacks this qualification can do no better than to provide himself with an assistant who possesses it.

It is the duty of the assistant to relieve the executive of all possible details; to stand between him and the petty annoyances of the daily routine. In many large corporations the assistant purchaser has complete charge of the purchasing of certain groups of materials, such as standardized fittings, lubricat-

ing oils, supplies for upkeep, office equipment, etc. It is usual for the assistant to:

1. Supervise all clerical work and workers.
2. Check for accuracy, neatness, completeness, etc., all entries on index cards, all filing of reports, bids, etc.
3. Examine all correspondence coming to the department and attend to all but the more important matters.
4. Handle, or assign some one to handle, all routine matters.
5. Sign the purchasing executive's name to orders, letters, etc., when so authorized.
6. Take complete charge of the department in the absence of the purchasing executive.
7. See to it that necessary data pass promptly from his department to other departments and vice versa.

**Duties of the Chief Clerk.**—Only the assistant and the chief clerk report directly to the purchasing executive. The work of the two is closely interwoven and requires constant coöperation. The chief clerk should be more of a detail man. His duties are more exacting, in that they deal with routine, such as checking of requisitions with written orders, checking of orders with invoices, and the correct filing of all data pertaining to orders that have been issued.

As a rule the chief clerk has charge of the clerks in the department. This is advisable in most in-

stances, as a detail man is better fitted to catch errors of all sorts than is the man of broader vision and greater executive ability.

The purchasing executive who chooses his assistant and chief clerk with careful analysis of their fundamental characteristics, assigning to each the responsibilities he is best fitted to shoulder efficiently, will find the routine of his office in perfect condition at all times.



## CHAPTER XIII

### STORES

**Vital Necessity of Properly Controlling Materials and Supplies.**—The materials and supplies necessary to the operation of any business, represent cash—are cash—only in a less liquid form. These materials and supplies should therefore receive the same careful handling as the dollar in the office. The stores department, whether or not so named, may be compared to a bank in which the firm's finances are deposited, and upon which checks are drawn.

It is the duty of the credit department to collect accounts and to deposit those collections in a bank. No receiving teller would accept a deposit, large or small, without checking the amount of the deposit with the notations on the accompanying deposit slip and making proper entries in the bank's books. No paying teller would deliver currency without a correctly written check, properly signed and indorsed, making the necessary deductions from the depositor's account. If records were not correctly kept in the bank, the man who made the deposits would very likely be called upon to account for the muddled condition of the firm's finances when the books came to be balanced. The purchasing executive is in a similar position to that of the

head of the credit department. It is his duty to secure materials and supplies and to see that they are delivered to the storeroom. The storekeeper or stock clerk stands in the position of receiving teller to the purchaser and of paying teller to the men who draw on the materials and supplies. No goods should be allowed to come into the storeroom without proper inspection, checking with order and entering on the books or index cards. No goods should be allowed to go out of the storeroom without a correctly written and signed requisition, followed by deductions from the amount on hand. Badly kept records in the stores department frequently reflect upon the purchasing executive to his disadvantage, and his department is called upon to account for the muddled condition of the firm's stores. Materials and supplies are capital of real value. They should be safeguarded with the same care as dollars.

**Defining the Stores Department.**—Broadly speaking, the department of business which has the custody of its stock in trade, materials, supplies and other physical properties, except real estate, is technically known as the stores department. All goods bought for resale, all primary materials, all supplies, appliances, repair parts, etc., required in the operation of the business must be purchased, cared for, systematically placed, guarded and delivered.

The function of the stores department, therefore, is to receive, check, store and issue all materials and supplies entering the establishment. A systematic,

accurate and comprehensive record must be kept of all stock in the storeroom for the following reasons:

1. To make sure that all materials are used for the proper purposes.
2. To prevent production delays through the lack of needed materials.
3. To prevent over-buying and misuse of capital.
4. To assure all materials being accounted for as part of the finished cost.

#### **Selecting the Best Method of Managing Materials.**

—The quantity and nature of the stores depends largely upon the type and character of the business. Many concerns do not have a department so named within their organizations. In the event that a number of factories, located at different points, require the same material and supplies, it is often considered more economical to buy in large quantities, specifying the different plants as receiving points, than it is to maintain a centralized warehouse. Materials of heavy or bulky character are more economically managed in this way, thus saving double hauling, unnecessary handling, etc. Some concerns work on a half-and-half basis, ordering primary materials, heavy machinery, etc., shipped direct to the point at which they are needed, and keeping all other supplies in some centrally located storeroom. Still others require all materials and supplies, regardless of their nature, to go through the hands of the storekeeper. These firms consider the uniform-

ity of their records to be of more importance than the possible saving accomplished by using different methods of handling different materials.

Certainly the nature of the materials, the location of the factories, and the type and character of the business must all be considered before a decision as to the best method of handling materials may be reached. Competent counsel on the general matter of system and management should be used to work out an economical plan.

**Supervision of Stores.**—There is a diversity of opinion as to the placing of supervision over the stores. This difference is more or less a matter of the policy of the management and the manner in which the business is conducted. The strength of the different departments, the nature of the materials and supplies, together with the geographical location of the factory or factories, must be considered before a decision may be arrived at in the allotting of the responsibility for the proper management of essential commodities.

Many concerns are of the opinion that stores are of sufficient importance to warrant consideration as an independent unit under the charge of a capable and intelligent storekeeper. Others believe that the stock reports should be kept by the manufacturing department. If that department is not strong enough to manage the stores properly, it should be strengthened rather than relieved of the responsibility. But the greatest number of corporations, taken by and large, place the supervision of



stores in the hands of the purchasing executive. In most instances this appears to be the logical allotment of the responsibility. For upon the purchasing department falls the blame of all failures to provide proper materials and supplies. As a matter of fact, the storekeeper is coresponsible with the purchasing executive in the maintenance of stock. Unless the stores department is an independent unit, working in coöperation with the purchasing department, it stands to reason that the storekeeper should report to the purchasing executive.

**Result of Faulty Store System.**—Upon the maintenance of stock depends the continuity of plant operation. Wherever the supervision of the stores department is placed, care must be taken to provide the storekeeper with proper means of checking the quantity of supplies. Too often a firm, operating with the most modern and complete office system obtainable, neglects entirely the systematizing of store-keeping.

A faulty stores system may have the following far-reaching effects upon the business:

1. Long delays in manufacturing through shortage of materials and supplies.
2. Unnecessary expense due to rush orders and purchases made under unfavorable conditions.
3. Difficulties arising from the necessity of accepting faulty or makeshift materials.
4. Tying up of capital by holding excessive quantities of stores.

5. Waste of materials through loss and bad handling.
6. Interruption of the continuity of operation with its attendant money-losing effects.

**Personal Qualifications of the Storekeeper.**—The man in charge of the firm's stock in trade is not only an accumulator and a distributor, but a financier as well. The stock he guards is his firm's cash. He should, therefore, be a man exceptionally well qualified for his duties of classifying, storing and issuing the materials under his care. His honesty and integrity should be so strong a point in his character that the men under his control may themselves profit by his example. He should possess the ability to manage men and materials with equal facility and should retain such a firm hold upon his department that the slightest infraction of the rules would mean the equivalent of the final pay check.

The storekeeper should be a diplomat. His personality should be such that he can deal with all classes of men from the highest official down to the laborer handling scrap. He must of necessity come in contact with a great many workers not directly responsible to him for their conduct. Men lacking in loyalty to the firm, perhaps; men who will deliberately or unconsciously waste materials and supplies; men who will appropriate their employer's property for their own use, considering such appropriations as their right; men who do not realize that misuse of materials is the same as misuse

of actual money—all will no doubt endeavor to use stores contrary to rules. In order properly to guard the stores, the storekeeper must be fearless, exacting, yet tactful. In dealing with men of equal or superior rank, he must be able to secure coöperation and get results through request rather than by argument or demand. He must comprehend his status and his duty as thoroughly as a sentinel, which, in fact, he is.

It is not essential that the storekeeper be a factory man, but the more he knows about the processes of manufacture going on in the factory, the better can he fill requisitions and watch for waste and unnecessary using of materials. It is essential that he be familiar with the materials in the storeroom, appreciative of their value and cognizant of their uses.

**Duties of the Storekeeper.**—Service has come to be the first requirement of every department in every type of business. Losses on account of inefficient service in the stores department can only be estimated, but the half has never been told. Whether these losses are caused by the system of stores management or by the type of man in charge of the stock, the effect upon the business as a whole is the same. The stores department exists in a certain specific relation to the activities of the business and it is the duty of the storekeeper to see that this relation is maintained.

The storekeeper, with the aid of his assistants must:

1. Furnish material and supplies when and where they are wanted.
2. Inspect and check goods received and report promptly all receipts with suitable description of condition, etc.
3. Record all goods received and disbursed in such a way that the amount on hand may be estimated at a glance (records kept in this way serve as a perpetual inventory).
4. Maintain eternal vigilance over stock and refuse to issue any save on proper requisition signed by the proper person.
5. Establish a maximum and minimum stock mark and hold stock within those limits.
6. Place requisitions for reorder with the purchasing executive far enough in advance to insure judicious purchasing and receipt of goods before stock on hand is exhausted.
7. Maintain standards established by standardization plans by seeing that the correct name and description of all material for reorder are furnished fully to the purchasing executive.

**Receiving.**—A receiving department is an important adjunct to the stores department, but, in all except very large organizations, the department is one in name only. Receiving and shipping are generally done by the shipping department. Boxes, crates, barrels, etc., are received and entered upon a receiving report in duplicate. The duplicate is filed in the receiving file of the shipping department while the original is sent to the storeroom at-



tached to the material. Here the storeroom receiving clerk opens the packages and checks the contents with the order. This method, while it eliminates the incidental cost of labor, saving of floor space, etc., which would be necessary if receipts are checked first in the receiving department and then in the storeroom, does not provide a double check upon receipts. The maintaining of a regular receiving department where materials are inspected, counted and weighed as soon as received, has the distinct advantage of furnishing additional check on orders. In case of disputes with outside concerns as to the amounts delivered, the evidence of two distinct departments is doubly reliable. Much can be said for the double check when its cost of maintenance is not out of proportion to its value.

All goods received in the storeroom must be counted and checked before storing and the same operation in the receiving room would amount to exact duplication of work. An accurate count, checked with order or invoice, is all, under ordinary conditions, that is demanded by the average business house. The custom of some firms to omit the amount ordered from the receiving clerk's copy of the order to insure careful counting seems rather useless. Inefficiency on the part of a clerk is better remedied by replacement.

**Sources of Indirect Loss.**—Even in the most modern of business managements there are innumerable sources of indirect loss. Many of these are so small as to be almost impossible of discovery.

There are however, three great sources of loss that are without doubt present to some degree in all manufacturing concerns.

(a) *A Lack of a Standard of Output.*—This makes it impossible to establish a standard of consumption and forces the stores department to carry a heavier stock than necessary. Excessive stock means:

1. Wasteful employment of working capital.
2. Interest on excessive investment.
3. Insurance on large quantity of stores.
4. Heavy depreciation on materials.

(b) *Shortage of Materials and Supplies.*—Continuity of operation which, in manufacturing efficiency, depends upon the availability of materials and supplies at the moment they are required. Shortage or absence of needed materials affects profits through:

1. Production delays.
2. Piling up of overhead.
3. Discouragement of workmen through lay-off.
4. Interference with standard of output.

(c) *Mismanagement of materials.*—This means more than losses through theft, waste, breakage and general bad handling in the storeroom, all of which is the direct responsibility of the storekeeper or stock clerk. An efficient storekeeper, working on a satisfactory system of stock keeping and perpetual inventory, is very often able to

stop all leakage chargeable to the stores department. But mismanagement of materials is traceable to the engineering, purchasing, manufacturing, and, in a lesser degree, to the stores department. It means indirect losses through:

1. Poor selection of materials.
2. Injudicious assigning of materials purchased.
3. Incompetent using of materials assigned.

**Elimination of Indirect Losses.**—In tracing the three major losses to their proper sources, modern business has sought and discovered means whereby these losses may be reduced to a minimum.

(a) *Quantity of Output.*—A standard quantity of output should be decided upon by the production department in coöperation with other departments, that is, manufacturing, sales, purchasing, etc. This sets a standard of consumption and eliminates:

1. Carrying of excessive stock.
2. Wasteful employment of working capital.
3. Danger of shortage of materials and supplies.

(b) *Control of Stores.*—Stores should be rigidly controlled by the following methods:

1. Consolidate all materials and supplies in one, or more, centrally located storeroom.

2. Close this room off from the rest of the factory.
  3. Put a storekeeper in absolute charge.
  4. Allow no material to be given out without written authority signed by the proper person.
  5. Provide suitable storage place for each class of material.
  6. Provide suitable filing and indexing of stores along the lines of perpetual inventory.
  7. Establish a definite maximum, normal and minimum stock limit according to the quantity of each material used over a given period. (Low limit should allow the purchasing executive to get estimates before placing reorders.)
- (c) *Management.*—Materials should be economically managed. For the promotion of economy, the following four points are essential:
1. Materials must be properly purchased, received, checked, stored and issued. This is the responsibility of the purchasing and stores departments.
  2. They must be properly assigned in order that the desired quality of output be produced in direct ratio to the actual value of the material used. This is the responsibility of the engineering, purchasing and manufacturing departments.



3. The value of the finished product must compare favorably with the actual cost of the material that goes into it. This is the responsibility of the engineering, purchasing and manufacturing departments.
4. A certain standard quantity of finished product must result from a relative quantity of primary material. This is the responsibility of every employee in every department where materials are handled.

## CHAPTER XIV

### INVENTORY

**Importance of Inventory.**—It is estimated that from 30 per cent to 60 per cent of a firm's capital is invested in materials and supplies. Of this, 20 per cent to 40 per cent is in real estate and equipment and the balance is in operating expenses, accounts payable, etc. Division of the capital investment differs with different types of business, but accurate knowledge of the distribution and disbursement of assets is vital to business success. Lack of accurate knowledge is frequently the cause of bankruptcy.

Because of the large amount of capital that must be invested each year in materials and supplies, inventory and stores are, as a rule, linked together. Taken by and large, real estate and equipment are more or less staple, while materials and supplies constitute movable possessions and are constantly changing.

Formerly, it was the custom in the majority of large manufacturing establishments, to shut down for a period of greater or less duration, usually ranging from two or three days to as many weeks, for the purpose of taking inventory. Since it was considered necessary to shut down for this purpose, inventories were taken but once or twice a year.

The enforced inactivity of machinery, materials and men, with its accompanying piling up of overhead, made this procedure one of great expense.

Modern business, however, has devised methods which allow of perpetual inventory of materials and supplies in the stores department and the listing and pricing of other physical properties without perceptible interruption of operation. There are different methods employed by different types of business by which a complete inventory may be taken at frequent intervals with comparatively little cost. All of these methods include some system of stock recording which allows of a running inventory.

**Essentials of Plant and Material Inventory.**—A complete inventory takes in all physical properties, equipment, tools, drawings, patterns, work in process, unsold manufactured products, and operating materials and supplies. All properties, except materials and supplies, are valued in the inventory at the cost of reproduction less depreciation. Materials and supplies, on the other hand, are generally inventoried at the actual cost at the time of purchase, no matter what the market value may be at the time of inventory. A surplus of some commodity, the price of which has fallen appreciably since the purchase was made, appears on the inventory as so much capital tied up unnecessarily.

The rate of depreciation of physical properties, except materials and supplies, depends upon the nature of the property and is, as a rule, figured on a yearly basis and prorated over monthly or quarterly

periods. Motor trucks, for example, must, under ordinary treatment, be replaced at the end of three years. Depreciation is figured at  $33\frac{1}{3}$  per cent per year. Machinery, which is estimated or known by experience to require renewing at the end of five years, is said to depreciate at the rate of 20 per cent. Five per cent is generally conceded to cover depreciation of buildings.

**Material Inventory—Perpetual and Physical.**—No manufacturer would go on issuing checks against an unknown bank balance. Nor, if he found his accounts payable at any time likely to exceed his cash accounts, would he delay to make provision for an adequate supply before the arrival of the due date.

Stock records, commonly referred to as perpetual inventory, provide the manufacturer with a running record of receipts and issuance. By referring to the stock records he may estimate the amount of goods on hand just as he might estimate the amount of cash to his account in the bank by looking over his check stubs. But perpetual inventories require perpetual attention. They should be balanced, as a bank book is balanced, at frequent intervals. A running inventory is theoretically correct, but, in practice, if left without check for any length of time, it is generally found to disagree with the actual amount of goods in stock.

Regarded in its proper functional relation, a perpetual inventory is nothing more or less than an accurate accounting of all goods that come into or go out of the establishment. These records should



be checked by physical count with such regularity that the figures thereon may safely be considered as exhibiting a correct inventory. The difficulties, and there have been many in the handling of such records, have been largely due to lack of attention on the part of employees. The idea that a "perfect system" is in operation has often inclined employees to let it operate itself—which is, of course, an absurdity.

**Purpose of Perpetual Inventory.**—Practically every business requires a different system of stock recording, governed by the type and character of the business, its general policy, its plans and its departmental methods of management. But without exception some comprehensive record of stock is of vital necessity. Whatever the system employed, the purpose of a running inventory is as follows:

1. To furnish accurate information as to movement of stock.
2. To aid in rigid control of materials and supplies.
3. To assist in the scientific establishment of normal, maximum and minimum stock levels.
4. To record all goods received.
5. To account for all disbursements.
6. To assure continuity of plant operation by maintenance of stock.
7. To guard against useless tying up of capital in excessive stock.

## 8. To facilitate physical inventory.

A theoretical stock record or perpetual inventory might be outlined which would, on the surface, appear to afford a perfect record. But theories are generally impractical when applied. Knowing the purpose of stock records, it is possible for each business to plan its system in such a manner that it will amalgamate all the requirements in a coherent mass. The installation of any system requires judgment of the highest order. The comprehensive, accurate and systematic recording of stock demands thought, action and perpetual attention.

**Stock Levels.**—The establishment of stock levels calls for the heartiest coöperation between the manufacturing, engineering, purchasing and stores departments. Consideration must be given to:

1. Size and nature of the business (seasonal requirements, etc.).
2. Character of materials and supplies.
3. Time required for manufacture or delivery of commodities.
4. Market conditions.
5. Rate of sales.
6. Rate of production.
7. Aims, plans and finances of the firm.

The perpetual inventory is of measureless value as a basis from which to calculate material and supply requirements. If the standard of output remains stationary the inventory will show a uniformity of disbursements and the stock levels will of

necessity remain stationary. If the rate of sales, and therefore the rate of production, fluctuates with any degree of regularity the material and supply requirements must be higher at one period and lower at another.

The *normal* stock level should represent the quantity that would be sufficient to supply the demand for a certain period or for a certain number of units to be manufactured. The *minimum* limit serves as low stock mark and the *maximum* as the highest. Many firms consider the minimum level as the point at which reorders should be placed. Others place this low level as the danger mark to be avoided, except in times of extremely unsettled market conditions and in anticipation of curtailment of output. Still others believe that the stock levels should correspond with the rate of sales and production, in which event the minimum stock limit would be in direct ratio to the minimum sales, while the maximum would conform with the high mark in selling the product.

The necessity in regard to stock is to have materials when wanted. It is better to carry quantities in excess of needs than to run short, but in the greater number of cases the running record of receipts and disbursements will aid materially in obviating the danger of getting materials in excess of actual consumption.

The thermometer of quality runs up or down according to the length of time it takes to get materials. If the commodity is purchased from a firm in

a distant city, or if time must be allowed for the manufacture of the article, the thermometer goes up. If the degree of dependability of the source of supply is doubtful or unknown, the thermometer goes up. On the other hand, when purchases of a standard article are made from a firm of known dependability in close proximity to the delivery point, the thermometer goes down. The date of placing the requisition with the purchasing executive should appear on the inventory card together with the date of receipt. In this way, all necessary data for the scientific establishment of stock levels may be kept upon the running record in the stores department. The storekeeper must work close to the purchasing executive in keeping stock at the proper level at all seasons and under all conditions.

**Purchasing Executive's Relation to Inventory.**—Theoretically, the purchasing executive of a large manufacturing establishment has no concern with the physical inventory of stock. It is the duty of the purchasing department to buy materials and supplies upon request and to see that these purchases are delivered as ordered. The active responsibility of the purchasing executive ends upon the receipt of notice from the receiving clerk or storekeeper that the order is completed.

In practice, however, stock inventory plays an important part in successful purchasing. Perpetual inventory serves as a base from which the purchasing executive may work in calculating his firm's probable requirements over a period of the same



length as that covered by the inventory. Materials and supplies received and consumed appear on the daily or weekly reports from the stores department, copies of which are usually filed in the purchasing department. Additions and subtractions made from these figures will give the purchasing executive a fairly accurate working knowledge of the quantities that should be on hand at any time.

Actual physical count, when compared with these deductions, will enable him to judge as to the efficiency of the stores management. Marked discrepancies between the perpetual inventory and the physical inventory serve as a warning that stores are not rigidly controlled or that records are carelessly kept. A surplusage of one article and a scarcity of another, when consumption is known to be comparatively uniform, will tell the purchasing executive that stock levels are not evenly balanced.

Accurately kept inventory and frequent physical count are of vital necessity to the purchasing executive, and should be considered as a record of past, and a guide to future, purchases.

**Stores Department's Relation to Inventory.**— Upon reporting to the purchasing executive that the order is "completed," the storekeeper automatically assumes responsibility for the goods received. It is the duty of his department to care for all materials and supplies until they are passed on to the consuming departments. The bins and racks containing the goods should be arranged so that the storekeeper can, at a glance, tell how his supply is

holding out. But records should be kept of receipts and issues in order that exact amounts of stock on hand may be found without referring to the bins or racks. The more systematic and comprehensive these records are, the more valuable they are to the storekeeper as well as to the purchasing executive, cost accountant, and other executives of the firm.

But in taking actual physical inventory, the storekeeper is responsible only for the actual amount of each item in the storeroom. Issuance presupposes that materials are to be used for the proper purposes and will be accounted for as a part of the finished cost. With the filing of the requisition and proper recording of the material issued, the stores department may be said to have performed its duty. Issued goods cease to be the concern of the stores department at the moment of issue. Only materials remaining in the stores appear on the inventory as chargeable to the stores department.

**Storekeeper as an Aid to Physical Count.**—The running account of all materials should be checked by physical inventory. This necessity cannot be overstated. Since it is the function of the stores department to record receipts and issuance, the storekeeper is the logical man to oversee the counting of goods on hand. If certain items are checked every day in regular order, so that each article will be inventoried at least once a year, there will be no need of suspending plant operation even for

a few hours while the count is taken. The best time to do this is when the balance of any particular item is at its minimum limit.

In any event, everything should be arranged to facilitate inventory. The goods, when possible, should be stacked so that the number of units in each layer consists of a certain known number. A clerk may then make the count, entering the quantity on cards bearing the name and description of each item. This card should be placed in a conspicuous spot, either on the stack or on the empty rack from which the stock was taken. Any goods issued after the count should be entered on this card in red ink, stating the amount, date and hour of issue. At the end of the day, when the plant is closed, a clerk may go through the storeroom, making proper deductions on the cards and entering the actual amount upon the inventory sheet.

It is well for the storekeeper to check the result of the count with his running inventory. This will aid him in detecting leakage, carelessness and misuse of materials under his care. The act of checking assists him in visualizing discrepancies, and any unusual latitude between the perpetual and the physical inventory will be observed and steps may be taken to discover the reason. The running inventory should be made to agree with the actual amount on hand after the cause of the discrepancy has been determined.

## CHAPTER XV

### STANDARDIZATION

**Why the Purchasing Executive Is Concerned with Standardization.**—The idea that the function of purchasing is to buy, at the lowest possible price, any and all commodities requisitioned by foremen through their department heads, has been revised. Far from being a mere order clerk, the purchasing executive has risen to a position of director and adviser to his entire organization. His department records the functioning of the various organs in the body of his factory, from the consumption of printed forms to the purchasing of necessary manufacturing equipment recommended by the chief engineer.

By watching the requisitions which come to his desk, he may keep his fingers upon the throbbing pulse of his firm. Requisitions for paper and printed matter give him a clear idea of the office systems in operation in each department; requisitions for primary materials tell him the rate of production and of sales; requisitions for supplies and repair parts tell him what type of machine is most economically operated and what parts are most susceptible to breakage, wear, etc. Without other basis for knowledge, the purchasing executive may learn from requisitions whether or not his firm is operating



upon complete standardization plans and how rigidly these plans are adhered to by the different departments.

Requisitions for purchase must pass across the purchasing executive's desk before they can reach the seller, and it is his duty to reduce the number and variety of these requests as much as possible. This he must do, not by refusing to purchase materials or supplies, but by studying the needs and methods of his firm, suggesting economical substitutions, advising simpler methods, and otherwise aiding in the perfecting of systems and processes which utilize purchased materials. He may estimate the rate of consumption of raw materials and buy in larger quantities at lower prices, thus saving the time required to handle a number of small orders. also he may cooperate with the engineering department in evolving plans whereby equipment may be standardized, standard parts adapted to special needs and supplies made interchangeable.

In general, therefore, the purchasing executive's office, properly considered, acts as a gauge and indicator of the status of the business, and provides the purchasing executive who has vision with a means of becoming important in the higher councils of his firm which he should prepare himself to use.

**Vital Necessity for Standardization.**—A standard is a unit of measurement which is steady and firm. It serves as a sample analysis to which all actions must conform. No modern business man would at-

tempt to operate a business without a complete set of general standards including:

1. Policies toward consumers.
2. Advertising and sales methods.
3. Salaries and commissions of employees.
4. Departmental systems and forms.
5. Quality and quantity of output.
6. Consumption of primary materials and supplies.

Yet many modern business houses, while developing standardization to its extreme limit in matters touching even indirectly upon the consumer, neglect the inner workings of their factories. The sales-manager knows precisely what his men are doing and how they are doing it, because salesmanship has been standardized. The production manager knows the quality and quantity of finished articles to be produced in a given length of time, because extent and value of output have been standardized. The office manager knows that certain records will be written and filed in a certain way, since systems and forms have been standardized. But the purchasing executive, whose duty it is to keep his factory in operation according to schedule, the sales up to expectations, the office supplied with proper forms, etc., often works in a chaos of unrelated facts, because standardization has not been carried down to operating equipment.

Especially does the purchasing executive of a large corporation suffer from lack of standardiza-

tion. A number of small factories brought together under one centralized purchasing department multiplies the difficulties of the executive, not by the number of factories but by the number of different articles of equipment operating in each factory. Standardization, while advisable for the small firm owning a single plant, is of vital necessity to the successful operation of the corporation. The purchasing executive, being the chief sufferer, should insist upon the coöperation of all members of the organization in the adopting of standards in all branches of the business.

**Beginning Standardization with Catalogues and Forms.**—For many years attempts have been made by various trade organizations to arrive at a standard size of catalogue for the purpose of expediting the filing and finding of items desired. Earlier failures are due, in part, to the fact that efforts were confined to specific trades and not to the generalization of the standard. For obvious reasons, the National Association of Purchasing Agents has succeeded where others have failed. A Standardization Committee was appointed by each local branch of this organization and individual members were invited to make suggestions and state objections, etc. The result of local coöperation was submitted to the Standardization Committee representing the organization as a whole.

After careful consideration of all phases of the question, a National Standard Catalogue  $7\frac{1}{2}$  by  $10\frac{5}{8}$  inches, was recommended by this committee and

this size is gradually being adopted by leading trade organizations throughout the country. The size recommended fits into the standard letter file. It can be doubled or halved without losing its relative proportions of length and width. It is cut out of the standard sheet of paper, 32 by 44 inches, with a minimum of waste. For these and other equally weighty reasons, this size was adopted in preference to the suggested 6 by 9 or 8 by 11 which, though they contained some of the advantages of the size adopted, did not embody all.

Having accomplished much in the matter of standardization of catalogues, this organization took up the question of forms. Invoices have been decided upon, purchase orders and other forms are under discussion at this writing, and standards will be recommended after a thorough analysis and discussion of forms in use and suggested improvements. Packing and pricing of articles, not by dozens and gross, but by the decimal system of single articles, tens and hundreds, are also under discussion.

**Standard Invoice.**—In October, 1920, after a year of intensive study by the Standardization Committee of the National Association of Purchasing Agents, the standard invoice, (a reproduction of which is shown herewith), was recommended and adopted. In discussing this question, it was found that the old method of invoice demands some fifty-one sizes of presses and eighty or more sizes of



folding and cutting machines. This increased the expense of printing and also wasted paper.

The matter was considered from three fundamental points: (1) paper size; (2) formulæ; (3) paper weight. A tentative form was drawn up and submitted to the members of the organization through the pages of its magazine and opinions were requested. Consideration was given to all points brought to the notice of the committee through whatever channel. It coöperated in every way possible with the individuals and organizations presenting definite ideas upon the subject and its recommendation of a standard invoice embodied a summary of all suggestions, reduced to a workable and practical design.

The size recommended is  $8\frac{1}{2}$  inches wide by not less than 7, and not more than 14, inches long. The idea is that any invoice between 7 and 14 inches can be folded back so that the 7-inch dimension may be retained for filing. A tolerance of  $\frac{1}{8}$  inch either way is allowed on the recommended dimension to provide for trim where necessary.

All the data given on the invoice may not be required by all concerns for their accounting routine, and in such cases the spaces need not be used. The printed data as given in the invoice will permit the form to be used for purchases by railroads and large industrial corporations and will obviate the necessity of rubber-stamp impressions.

**Purchasing Executive as a Balance to the Engineer.**—Scientific purchasing, if begun at the

birth of the business, will assure standardization throughout the plant. The purchasing executive, knowing the aims and plans of his firm, can develop cordial relations between his concern and a few of the more reliable sellers, thus securing their coöperation in establishing standards. In case of limited capital, a corps of friendly salesmen are invaluable in suggesting ways and means of reducing initial costs and holding fast to standardization plans at the same time.

There is, however, a constant tendency upon the part of engineers, foremen and those using equipment, to specify articles not standard or to suggest changing standards without due consideration of all phases of the change. An engineering department that is too ready to adopt new standards is even more expensive to the factory than one which refuses to make any changes at all. Intelligent coöperation between the engineering and purchasing departments is essential at any stage of the life of the business. The purchasing executive should insist upon being present at all conferences between engineering and manufacturing department heads. With all their specialized knowledge, some efficiency engineers are notoriously impractical. Having discovered some new labor-saving device and proved that it will work out in practice what it promises in theory, the engineer is very likely to consider only the saving in time and labor costs, utterly failing to see the initial cost of the device or to realize that there may be reasons why such a device will not pay

for itself under conditions existing in the plant. On the other hand, he may see economy in the present by refusing to approve a new device and short-sightedly overlook the bearing of that economy upon the future.

The analytical power and foresight of the purchasing executive serves as a balance to the engineer, and modern business management has come to recognize this fact. In the hands of the engineer is the planning of the factory, the selection of methods, etc. He tests and suggests machinery and appliances with an eye to utility, location, etc.; but the final decision, in many live-wire business houses, is up to the purchasing executive who knows prices, processes of manufacture, intended use of each piece of equipment, and the future aims and plans of his firm.

**Do Standards Interfere with Progress.**—The question has arisen: Do not standards of equipment stand in the way of progress in adopting the best, to-day?

Standards are set, as a rule, by the engineering department with the coöperation of the manufacturing department, or other departments using the equipment. When one particular article is found to be more serviceable than another, it should be adopted as standard. When a still better article is found and sufficiently proved, the standard should be changed. In establishing new standards, however, inventory should be taken of the amount of the former standard on hand in the storeroom. There-

fore, it is advisable to make changes when stock is at a minimum. It must be decided whether the obsolete stock is to be used and all reorders placed for the new standard, or whether it is advisable immediately to replace all existing articles of the kind for the new standard. The latter procedure should be followed in the case of some dangerously defective article, but under ordinary conditions the discarding of any great amount of stock means heavy expense unless the article is such that it may profitably be salvaged.

A stagnated engineering department, satisfied with the service of one standard and refusing to recognize the forward march of inventive genius, will, without doubt, stand in the way of progress. But this is not the result of standardization but of stagnation. The remedy does not lie in the elimination of standards, but in infusing new blood into the department controlling standardization plans. The diplomatic purchasing executive is in a position to offer a remedy for such a condition.

**Effect of Standardization upon Requistors.**—Within the organization, standardization has its effect upon the attitude of requisitors toward the purchasing executive. Returning to the tendency of requisitors to specify articles not standard, the purchasing executive's ability to manage men stands him in good stead. Oftentimes, a curt refusal to supply the article specified, together with the information that an article of another manufacturer is being forwarded, will precipitate a long and



wordy discussion. The requisitor, having decided upon the article specified by him, will, nine times out of ten, find all manner of fault with the article substituted. He may even resort to dishonesty or vandalism in order to salve his injured feelings and the affront to his judgment.

A friendly note from the purchasing executive, however, stating that, much to his regret, the article specified cannot be furnished, because a certain other article is the standard, will settle the question for all time. The requisitor may still be inclined to doubt the wisdom of the choice of standards, but he knows better than to insist upon the delivery of the article not standard without weighty reasons. There are innumerable stories told by seasoned purchasing executives about factory superintendents and foremen who refuse to find merit in any but the article to which they are accustomed from habit. Various methods of persuasion are applied with indifferent results. One purchasing executive, weary of argument, resorted to the trick of placing the label from the article praised by the requisitor upon the standard article. The ruse worked, and the determined requisitor was confronted with the proof of his stubbornness.

**Effect of Standardization upon the Seller.**—Purchasing executives have been known to object to standardization on the grounds that, by adopting one manufacturer's product as standard, the buyer puts himself at the mercy of the seller as to quality, price, delivery and service. These men reason thus:

A vender, knowing that his product has been adopted as the standard by the buyer, knows also that this standard cannot be changed without considerable expense and trouble. He is sure of his market and, in time, will grow careless with the voluntary orders from that firm. Quality is likely to fall below that of the first few deliveries and prices are likely to be held up regardless of market conditions.

Such a condition may arise upon rare occasions, but certainly it cannot be said to be of sufficient frequency to warrant the adoption of many models of equipment. In establishing standards, it is seldom necessary to confine the source of supply to one vender. In fact, it is seldom advisable to do this, lest fire, strike or other disaster overtake the vender. Every purchasing executive should provide himself with an emergency source of supply whether or not his factory operates upon standardization plans. This division of purchases acts as a stimulant for the vender and keeps him on the alert. The name of the firm standardizing on their products is frequently used by sellers in sales talks. To lose any one of these firms would call for explanations, and if the change in standards has been brought about through the fault of the seller, the truth will almost certainly leak out sooner or later and business will fall off as a direct result.

The purchasing executive who takes the seller into his confidence and asks his aid in establishing standards will, in most instances, get the best possible price, delivery and service. He should, of

course, take all possible precaution to protect himself. Careful checking of deliveries, comparison of goods with original samples, and attention to the market prices of raw and finished materials combined in the purchase are essential to right buying at all times, and no amount of confidence in the seller can eliminate the necessity for alertness on the part of the buying concern.

**Misuse of the Word "Standardization" in Price Baiting.**—Some few purchasing executives have used the magic words, "We hope to standardize on your product if the price is right," in an effort to squeeze a lower price from the salesman. To say that an article is being adopted as standard implies that a large quantity will be purchased throughout the year. If this implication is correct, there is no reason why the purchasing executive should not get the benefit of his quantity purchase. But many concerns, while actually standardized, have need for but a few of certain articles and are not entitled to the quantity price. It is not the fact that standards are established that causes the seller to make price concessions, but the promise of an assured market for a large quantity of his product.

The purchasing executive who deliberately sets about misleading the salesman by resorting to methods as nearly sharp in practice as is the misuse of standardization promises, will find, in the final analysis, that he has lost a dollar's worth of valuable confidence for every penny he has saved.

**Effect of Standardization upon Storekeeping.—**

The storekeeper is one of the greatest sufferers from multiplicity of models of equipment in factory operation. The purpose of the stores department is to maintain stock available for every emergency. A plant operating with machinery of different manufacture serving the same purpose, but demanding different types of supplies, multiplies the number of articles in the storeroom. These must be received, checked, stored and issued and a perpetual inventory kept of each. The work of the storekeeper and the number of assistants he must employ depends largely upon the number of articles to be kept in stock.

Standards, when established, considerably reduce the cost and amount of stock to be maintained and greatly assist in storekeeping. It is the storekeeper's duty to check the tendency of requisitors to specify articles not standard and to establish standards where they are not already prescribed; also, to call attention to standards that work against economy in the use of materials. In this he may be of great assistance to the purchasing executive who, though he may know all about the article in question and understands its uses, is unable to keep in close touch with its performance in relation to production.

**The War as a Stimulation to Standardization.—**

During the war, the purchasing executive was compelled to take what he could get without the opportunity to pick or choose. Enforced conservation stimulated sellers to reduce the number of their



standards; production was limited; deliveries were a matter of months; and factories throughout the country were confronted with idle equipment, idle men and delayed production. The purchasing executive's desk was buried in a sea of requisitions, all of them marked "rush." Typewriter and telephone worked frantically in an attempt to locate necessary materials and supplies. In the storeroom, shelves and bins were running over with supplies that could not be used and short of equipment that should be there. With pencil and paper engineers often figured far into the night, trying to devise methods whereby equipment might be changed to fit available parts, or parts modified to fit equipment.

But out of the chaos of wartime confusion came the uniformity of order. The saying that necessity is the mother of invention has been freshly impressed upon the minds of every one. Salesmen assisted with practical suggestions; engineers sought purchasing executives for advice; foremen tried their hands at patching up machines which in former times would have been scrapped; coördination and coöperation extended to the farthest corner of the factory and standardization became a fact instead of a theory in practically all modern manufacturing factories.

## CHAPTER XVI

### RECORDS AND FORMS

**Qualifications of an Ideal Purchasing System.**—Scientific purchasing lies in the breadth and strength of the purchasing executive's judgment. In order to exercise this judgment, he must be relieved of the minor details of department routine. Many purchasing executives are so hampered by myriad little things that they have neither the time nor the energy to devote to their real work. For this reason, a well-defined purchasing system should be installed which will reduce clerical routine to its lowest denomination and free the purchasing executive from the obstruction of misplaced details.

The ideal purchasing system records every essential fact, with a minimum of labor, and in such shape that it is instantly available as a basis for intelligent decision and action. It encompasses continuity of facts which lead from the requisition to the paying of the invoice with information available at all times to show at just what stage the transaction has arrived. It should eliminate guess work and make the knowledge and experience of the department a matter of record rather than of recollection. It should insure accuracy on prices, quantities and deliveries and automatically prevent

duplication of orders and twice-paid invoices.

No system can attain such perfection that it will run itself. Any method of recording purchasing activities should be self-checking throughout; should eliminate as much possibility of error through transcription as may be obtained; and should require as little supervision as is consistent with the importance of the information recorded.

**Origin of the Following Forms and Discussion Thereof.**—The author is indebted to the committee appointed by the New England Purchasing Agents Association for all of the following forms and much of the discussion thereof (with the exception of the Purchase Order Form). This committee was appointed to look into the matter of recommendations and along the lines of standardizing purchase records and forms. In considering the subject the committee kept in mind the fact that the subject is one of vast detail and of many aspects. A system of purchasing adaptable to one style of business would not in reality be adaptable to many other kinds, and some firms are obliged to use special or particular methods to meet the demands of their factory accounting, managements, and systems. With all this in mind the committee went to work with the idea, not of formulating a system, which could be used by all in its entirety, but to present by careful analysis, the salient features of a purchasing system, which could be adopted in general by any company, and leave to the company the regulation of its details and minor changes.





more concerns have a central stock clerk, who alone is responsible for all of the stock and raw material used in the plant. In this case the various department foremen look to him both for stock and information, and he, in turn is representative of them, and stands between them and the purchasing agent in the daily affairs. The requisition blank should be of standard size and should give the following facts:

1. Size, 4 by 6, or 5 by 8, for convenience in filing.
2. Numbered in sequence for the convenience of the stock clerk in following up and for convenience of the purchasing agent in filing.
3. Show quantity and quality desired, with sufficient detail to allow the purchasing agent to answer any questions put to him by the vender, in case of doubt. (This latter applies more particularly to tools, machine fittings, hardware, electric appliances, etc., which require special articles for special work.)
4. Show the nature of the work intended to be done with the articles ordered, except in case of raw material.
5. The department for which the goods are intended should appear to enable the purchasing agent readily to obtain first-hand information if necessary.
6. Provide suitable space for typing in the purchase order number for convenience in reference.

7. At least two copies should be made out; more if the system involved in a particular case necessitates it. If the stock clerk is provided with a copy of the purchase order (see the purchase order), two copies of the requisition are sufficient; but if the stock clerk does not receive a copy of the purchase order, which is to inform him of the daily purchases, then a third copy of the requisition is advisable. The third copy of the requisition is to go to the purchasing agent with his original copy, and he is to state on it that goods have been ordered, and return the same to the stock clerk.

If a requisition blank is provided with the above information it covers all points necessary to begin a purchase, and is suitably provided with the essential features to permit following-up by the stock clerk, and reference by the purchasing agent.

**Purchases Made without Requisition.**—Two other features should be considered at this time, both occurring without a requisition, as follows:

1. Voluntary orders by the purchasing agent.
2. Local purchases by branch houses without requisition.

The first occurs frequently, because of the purchasing agent's familiarity with market conditions and circumstances, and orders are placed without requisitions. Therefore, in such cases, in order that the stock clerk may know what is ordered and avoid duplication, the purchasing agent should send him

a memorandum stating that he has ordered a certain commodity, and requesting a confirming requisition to be made therefor.

The second case frequently occurs on small items, which are left to the officials of a branch house. The head purchasing agent should receive copies of all such orders; and as they are generally a small matter, and within a limited value fixed by the company, the question of informing the stock clerk, and requesting a confirming requisition is optional, although, to complete the records, it may be deemed advisable to require it.

Some firms handle the matter of purchases by branch houses through the maintenance of a petty cash fund, provided for this purpose, in which case a block of "Emergency" order blanks in duplicate are furnished the branch house. These forms are filled out on the day of purchase by the local purchaser, giving the article and price paid from the petty cash fund. The original is forwarded at once to the purchasing agent for filing, while the duplicate is filed in the branch office. The amount of this fund is fixed by the company and rarely exceeds one hundred dollars.

**Filing of Requisition.**—The purchasing agent, after he has written the order and has typed in the order number on the quotation (see quotation), should file his copy under commodities, and on following-up can refer to the requisition by number, thus enabling the purchasing agent to have ready and quick reference to it. On

looking up the order, the purchase-order number and the whole transaction will be immediately connected. This involves two references to the purchasing agent's files, but is presumably the least number of times necessary, in order to be sure of accuracy, for, by reference to requisition number, the purchase number of the article wanted is brought to attention, and an error cannot take place. Otherwise, if a short cut is attempted, it may be that the purchasing agent will take his time and trouble to follow up and make a report on another article not so much needed.

**Quotations.**—Whenever and wherever time and conditions permit, and it is deemed advisable, quotations should be obtained from several dealers. Many companies prefer doing this by letter, but the simplest and best method would be by regular printed quotation form blank with necessary details of such a transaction, showing the requisition number, and with suitable space for specifications. The time limit for an answer should be printed thereon, and, by having a printed form typed in, as necessary, dealers immediately sense the fact that other firms are receiving this quotation, and it has a tendency to bring results in the form of the lowest possible price. Oft-times, if the letter method is employed, some dealers apparently do not realize that it is a request for a bid, or that other companies are receiving the same thing. A great many important purchases must be made without a quotation, because of emergency conditions, which do



not permit of taking the time necessary, but when it can be employed, it should be, both to secure the lowest price, and at the same time to gain valuable information regarding market conditions.


It is the practice of many firms to furnish quotation blanks to the bidder in pairs, the purpose of the duplicate copy being for the bidder's convenience in reference in case of the purchaser's acceptance of the bid. "Vender's File Copy," or some

Form No. _____		<b>JOHN DOE &amp; CO.</b> 900 WEST ST. BOSTON		QUOTATION No. _____	
DATE _____					
To _____					
PLEASE QUOTE YOUR LOWEST PRICE; TERMS AND DISCOUNTS, ON OR BEFORE				ON GOODS SPECIFIED BELOW	
QUANTITY	MATERIAL	DELIVERY	F.O.B.		
<b>JOHN DOE &amp; CO.</b> 900 WEST ST. BOSTON, MASS.		DATE _____	Pur. Agent _____ QUOTATION No. _____		
ON GOODS SPECIFIED BY THIS QUOTATION No. WE QUOTE PRICE; TERMS AND DISCOUNTS AS FOLLOWS				F.O.B.	

FIG. 5.—QUOTATION BLANK.

similar explanatory phrase, should be printed at the top of the second blank. This method insures the meeting of minds in terms and subject matter, in case a contract is formed between the purchasing agent and the vender, and saves time and trouble in all correspondence which may follow the request for bids.

**The Purchase Order.**—In making out purchase orders, purchasing agents and their clerks should be very careful to specify sufficient detail to make a complete statement of what is ordered as to quantity and quality, prices, discounts, terms, routing,

Form No.  <p style="font-size: small;">Put numbers or initials up to and in this corner.</p>	<b>PURCHASE ORDER</b> <b>JOHN DOE &amp; CO.</b> 100 WEST STREET Boston, Mass.	Order No. <p style="font-size: x-small;">The number next appears on invoice B/L, check, invoice, packing slip, and other documents.</p>
_____ _____	Date _____ 19__	Ret. No. Dept. Store or Div. No.   Sellers No.
Please SHIP the following merchandise SUBJECT TO CONDITIONS below:		
Ship to _____	Ship Via _____	F. O. B. _____
Date to be shipped _____	Terms _____	
QUANTITY	ARTICLES	PRICE
VERBATIM FORM No. 1 of STANDARDIZED PURCHASE ORDER DRAWN BY STANDARDIZATION COMMITTEE NATIONAL ASSOCIATION OF PURCHASING AGENTS  SIZE 8 1/2 x 11 NUMBER OF COPIES OPTIONAL COLOR OF ORIGINAL NOT DETERMINED		
Mail invoices [in duplicate] and original B/L to _____		
<b>IMPORTANT CONDITIONS</b>		
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	1. Mail addresses of this order handwritten. 2. No charges allowed for handling, packing or crating. 3. If prices are higher than specified, the unit shall apply. 4. If prices in contract are subject to a contract then prices will be the lowest prevailing market prices. 5. No one ship order to any specified date, unless otherwise notified. 6. Goods ordered to our inspection on arrival, immediately upon payment to obtain with clearance. 7. Goods returned on account of inferior quality or workmanship will be returned to you with charge for transportation both ways, and are not to be received except upon receipt of rightly issued purchase order forms. 8. It is agreed that goods ordered shall comply with all Federal Laws relative to taxes, and that you will defend and save incurrence due Government from loss, cost or damage by reason of actual or alleged infractions of laws relative to excise taxes. 9. Orders not shipped on date specified may be cancelled by us. In case order calls for partial shipment, balance may be cancelled or purchased upon notice, and completed shipment may be taken balance and of any of balance due shipping date specified. 10. If these conditions are not acceptable, please refer to us in writing of the order, and before you make any shipment.	
<b>JOHN DOE &amp; CO.</b>		Purchasing Agent

THIS SPACE LEFT FOR PUNCHING FOR POST BINDERS

FIG. 6.—PURCHASE ORDER BLANK.

etc., which, if followed carefully, will prove valuable in case of disputes or litigations. In all such cases the order is the foundation of the firm's claim and

must be depended upon to prove any contention that may arise. A contract is formed upon the vender's acceptance of the purchaser's offer to buy and, if goods are not up to quality, and the order has been concise, clear and definite, the purchasing agent's firm will be protected.

The Purchase Order (Fig. 6) is the one compiled by the Executive Council of the National Association of Purchasing Agents and recommends:

1. That the size be that of the standard letter— $7\frac{1}{2}$  by 11 inches. A margin of  $\frac{3}{4}$  inch is allowed at the left side, for punching for post binders; if not desired for this purpose, the printing can be extended to include this space.
2. That the words "purchase order" at the top be in  $\frac{1}{8}$  inch letters, the name of the firm underneath in  $\frac{3}{16}$  or  $\frac{1}{4}$  inch letters.
3. That the left top, between "form number" and space for addressing the vender, space be left for trade mark or insignia.
4. That the data appearing on the purchase order should be:
  - (1) Order number in sequence, with request on vender's copy and the copy retained by the purchasing agent, that the purchase order number appear on all packages, cases and invoices.
  - (2) Date of order.
  - (3) Requisition number, department, stores or division number and seller's number.
  - (4) Name and address of the vending company.

- (5) Shipping address, routing and date to be shipped.
- (6) Address to which invoices and original bill of lading are to be mailed, with request for duplicate or triplicate if desired.
- (7) The order should be typed-in clearly and definitely with price, discount, and terms, whenever possible, and whether f. o. b. destination or not.

Under "important conditions" which appear at the bottom of the order only such conditions as seem to be generally in order for all firms concerned have been suggested. Certain companies necessarily require other conditions, which are generally local in character; a list of some of these particular conditions (Fig 7) is given but their adoption is optional.

Conditions should be as brief as is consistent, but should appear on the face of the order and above the signature of the purchasing agent.

There should be at least four copies of the purchase order as follows:

- (a) One copy for the vender.
- (b) One copy for the receiving clerk.
- (c) One copy for the stock clerk.
- (d) One copy to be retained by the Purchasing Department for its permanent records.

For greater convenience in filing, the purchasing agent's copy of the order should be made of light flexible cardboard, which will file better than if made



NATIONAL ASSOCIATION OF PURCHASING AGENTS

Standardized invoice adopted at 1920 Convention  
 19 PARK PLACE, NEW YORK

Shipper's Order No.  
 Date shipped  
 Shipped from  
 Shipped to  
 Destination

Invoice date  
 Invoice No.  
 F. O. B.

Buyer's Order No.  
 Requisition No.  
 Contract No.  
 Car No. and Init.  
 Via.

Terms:  
 To be  
 printed  
 here

NAME AND ADDRESS OF PURCHASER TO WHOM INVOICES IS  
 TO BE MAILED MAY BE PUT IN THIS SPACE

The column reserved for use of buyers

INVOICE	}	CHECKED	P. A. Record No.
			With order
}	}	}	F. O. B. point
			Price
			Calculations
			Freight
}	}	}	Freight
			Freight
			Rec'd by P. A.
			Sent by P. A.
}	}	}	To outer off.
			From outer off.

Charge Account

Approved

Approved

Four top lines are to be replaced by shipper's name and address.

Sheets to be 8 1/4 inches wide and not less than 7 inches nor more than 14 inches long. Printed either way of the sheet. A tolerance of 1/8-inch in either dimension. Invoices longer than 7 inches have dots or short rules placed on the sides at the distance of 7 inches from top to indicate point of fold for filing.

It is urged that all invoices be cut from 17x22 or 17x28 stock.

Certain blank spaces such as "Shipped to", "Destination", "Invoice No.", "Contract No.", "Car No.", etc., are intended for use when such information is required to identify a shipment.

Material described above received in good order \_\_\_\_\_ DATE \_\_\_\_\_ (Signed) \_\_\_\_\_ (Title) \_\_\_\_\_

FIG. 7.—NATIONAL ASSOCIATION OF PURCHASING AGENTS.

out of paper. It is also easier to handle, and not so liable to be lost or blown away. Sometimes a fifth copy is made for later reference to the Costing or Accounting Department, and often a sixth copy is sent with the original to the vender for his acknowledgment. The copy going to the vender should be printed at the top "Purchase Order." The other copies should have printed at the top the names of those who are to receive them, such as "Stock Clerk's Copy," "Receiving Clerk's Copy," etc.

**Acknowledgment.**—It is advisable for all purchasing agents to make suitable arrangements to obtain an acknowledgment on orders, particularly on those which come from other than local territory. The form of acknowledgment is generally one of three methods. As stated, some companies send an extra copy of the purchase order to the vender, suitably printed for an acknowledgment. This, of course, being a carbon, will have the exact information on it of the goods ordered, and will have a space for the vender to supply the information as to time of shipment. The second method, and that which seems to be gaining favor, is to have an attached, perforated slip at the bottom of the vender's copy of the order, which gives the order number and date, and leaves a space for the vender to fill, on which he will specify the date of shipment. The third method consists of a separate acknowledgment form (Fig. 8) which includes printed data of requisition number, date, order number, name and

address of the purchasing company, space for the listing of the items ordered and the date upon which the vender will make shipment. Some firms do not require the acknowledgment to list the items, considering the order number and the date of shipment to be sufficient for record purposes. This form is often printed upon a postal card bearing the printed address of the purchasing company with the request to return the same.

After the order is submitted and acknowledgment is received, or if the information as to time of shipment is received in any other way, the order is within the sphere of the Follow-up Department, which may be conducted by the purchasing agent himself, or, as many concerns are doing, by means of a clerk who has sole charge of this.

#### OPTIONAL CONDITIONS

Invoices in duplicate, shipping memoranda and bill of lading with full routing must be mailed to us at ..... on date of shipment.

Unless otherwise specified, payment of invoices are subject to a cash discount on 15th of month following receipt of invoice.

Material will be received subject to inspection and, if found defective, or not in accordance with specifications, will be returned at your expense.

A delivery receipt showing order number and description of material must accompany all city deliveries.

By accepting this order you agree to defend, protect, and save harmless ..... its customers and the users of its products, against all suits and from all damage claims, and demands for actual or alleged infringements of letters-patent by reason of the use of the articles hereby ordered.

We reserve the right to cancel this order, or any portion thereof, if deliveries are not made as specified herein.

If this order is subcontracted the subcontractor must be





**The Follow-up System.**—It is necessary in order to get satisfactory service, and to keep the purchasing company advised regarding deliveries, to adopt a follow-up system. It naturally follows that this system should be applied more intensely to out-of-town shipments than to local pick-ups.

A great many concerns use a signal system, which is a small, metal, movable tab, placed on top of the purchasing agent's copy of the order. This top is marked off numerically from 1 to 31 inclusive, or any other number. The tab is placed over the number corresponding to the one on which advice has been received that shipment will be made. In connection with this point of determining the date of shipment, it is easy to see that the acknowledgment of the order occupies a place of the utmost importance. The signal tabs arrange themselves in a straight line throughout the order file, and all tabs for given dates can instantly be noted and the cards removed. The first thing to do is to ascertain whether the invoice from the shipper has been received. If not, a letter or blank form of inquiry should be sent out and the tab moved ahead the requisite number of days for the receipt of the answer. The tab should then be changed to conform to the answer. A great advantage of having a light, flexible cardboard for the purchasing agent's copy of the order as aforesaid, will here be noted, for the objection has been made that, where the purchasing agent's copy is of paper, tabs are easily misplaced and get moved to other dates, which will involve in-

RECEIVERS COPY  
SHIPPERS COPY

PURCHASING AGENTS COPY

**PATTERN SHIPPING ORDER**  
BOSTON, MASS.

Form No.

No.

DATE

19

To

THE PATTERNS LISTED BELOW ARE SHIPPED TO YOU ON ACCOUNT OF OUR PURCHASE ORDER NO. WHEN CASTINGS ARE DELIVERED, RETURN PATTERNS WITH THEM. SHOW RETURN OF PATTERNS ON YOUR INVOICE AND QUOTE PATTERN NO.

QUANTITY

DESCRIPTION

John Doe & Co.

Pur. Agt.

FIG. 9.—PATTERN SHIPPING ORDER.

accuracy. The tab method saves all extra expense of having an extra copy of the purchase order and an extra file.

Many firms, however, prefer to use an extra copy of the purchase order, with the proper notations made thereon by the purchasing agent or clerk in charge as to the probable date of shipment. This copy is filed by date of expected shipment and on each day letters or blank inquiry forms are sent to those vendors from whom no invoices have been received as expected. (For further use of this copy of the purchase order see "Relation of Purchasing Department to the Accounting Department.") Either system will bring results if properly looked after, and especial care should be taken of the follow-up records whatever the method used. A great deal of money and time can be lost by a company whose shipments are not received promptly.

**The Record Cards.**—A record card of some form is necessary to every purchasing department. In considering this card it is necessary to decide what information, and how much, the purchasing agent needs for ready reference in the future concerning the article purchased, the quantity, the price, and from whom it was purchased. These cards should be indexed under the names of commodities. For example, cards headed at the top Gasoline, Flour, Portland Cement, Coal, and other words of a general nature, require no explanation. Neither do cards headed Nails, 8-penny, Coated; Lumber, Hard Pine 6 × 8; and a card for each does not involve too





3. Unit price.
4. Date of shipment.
5. Quantity, price and discount, or net price per unit.
6. Column for checking price if O. K.
7. Date of delivery.

Regarding the quantity, it is deemed advisable by some to have two columns; one in which to enter the number of pounds, gallons, feet, etc., and the other to be used where there is a carload shipment of a commodity, and to show the number of units contained in the car, such as the number of casks, barrels, bales, boxes, etc. This latter is not of primary importance, except where this information may prove helpful to the traffic department, in cases of claims or of faulty deliveries, and in later questions relative thereto. If either column must be eliminated, the large column showing pounds, gallons, etc., should be kept.

As to the cost column, whether or not the record cards show the price and the discount or the net price with the discount figured off, is a matter to be decided by the purchasing agent. Particular attention is called to the relation in which the sample diagram is arranged, namely, having the commodity at the top, and the different orders and deliveries in the same straight line underneath. Thus at a glance can be shown how much of a given article has been used since the first of the year, and even the year previous, or for any six months. There are no other details appearing on this card, and *no de-*

*liveries are entered until order is completed; then one entry finishes the item.*

The partial delivery notations appear on the back of the purchasing agent's copy of the purchase order (Fig. 10) which he keeps in his file in the nature of a continuous record. Each delivery is subtracted from the last balance due, and a new balance shown in the right-hand column until the order is completed; then the copy of the order is taken from the live index, notation of the total is made upon the record card, and the purchase order is filed in the dead index. By these means, the purchasing agent can find information on any order from either of two sources. Incomplete shipments are found on his purchase cards, and complete shipments on his record cards. This method will be found to save a great deal of extra work, for it is essential that the partial deliveries should appear upon the purchase order, and it is unnecessary duplication of work to put the same items down upon both the order card and the record card.

**Filing the Record Card.**—The record card in general use to-day is of standard size, 5 by 8 inches. However, there is a possibility that a special card 8 by 10, because of its greater utility, may supplant the 5 by 8 size with the majority of purchasing agents, for experience has shown that a card 8 inches wide and divided in the center does not provide sufficient space for all the columns necessary for two complete records on the face of each card. A 10-inch card makes up this lack and, in installing a

new filing equipment, it is advisable to consider adopting the 8 by 10 size.

The record card should be filed by commodities, in a file classified by departments or branch houses, or by expenses, such as Raw Material, Packing Material, General Expense, Power and Heat, Shipping Expense, etc. The cost accountant should be called into consultation on this point.

Some purchasing agent's forms, as the circumstances of their organization may require, show a distribution column on their card; that is, they show the department or branch to which the particular goods go. Possibly department stores, municipalities, and other businesses of similar nature would do well to incorporate this feature in their records, but most business concerns do not require this column.

**Receiving Record.**—The functions of the receiving department are closely allied to the purchasing department, and the two should work in conjunction. Many concerns do not consider this department in its true status, but whenever possible the purchasing agent should insist upon having a bright and able man as receiving clerk, and should have the right to use such methods or practices in coordination between himself and this clerk as is necessary to handle the delivery of goods accurately and completely.

As has been stated, the receiving clerk is provided with a copy of the purchase order for his guidance in determining the name of the shipper and





provided in triplicate. It shows the name of the shipper, the name of the transportation company, *pro* number, order number, and freight charges at the top, and the quantity and name of goods below. Slips are, of course, entered by the receiving clerk. The original and duplicate are forwarded to the stock clerk or to the department heads, according to the method employed in the different companies. The original is signed by the person who receives it and passed on to the purchasing department. The duplicate is either retained by the stock clerk or department head, and the perpetual inventory is posted from it—if he keeps it—and, if not, the duplicate is sent to the department which does keep the perpetual inventory.

The same procedure is adopted throughout when an order is filled by partial deliveries, a new receiving slip or record being made out for each delivery.

**Checking Invoices.**—The purchasing agent should check all invoices for the material which he has ordered, as he is in a position to know the quality and quantity wanted, and is familiar with samples, the needs of his factory, etc. To allow any other department to check invoices is not for the best interests of the company, although some companies employ it as a safeguard. Having received the original and the receiving record (or records of partial shipment), the purchasing agent compares them with the invoice, makes notations of any shortage, attaches the receiving slips to the back of the invoice and passes it to the clerk who enters the record cards.

No invoice should be held for entry for longer than twenty-four hours, because of the possibility of losing the discount by delayed payment.

The clerk, after making the proper entries on the record card, passes the invoice to the Accounting Department. In regard to the permanent disposal of the receiving clerk's copy of the purchase order, some companies provide a rubber stamp, marked "RECEIVED," with date and quantity. This is stamped upon the face of the receiver's copy of the order each time a delivery is made upon a part of that order, and, when all deliveries are received, the copy is sent to the purchasing department and filed permanently in numerical order.

A very good system adopted by some firms is as follows:

On the back of the purchasing agent's office copy of the order there is kept (Fig. 12), on one-half of the sheet, a record of all receipts pertaining to that order, and other data necessary, and, on the other half, a record of invoices as to date, quantity, price, discounts, and, when possible, the invoice number. When the shipment is completed and invoices are paid the purchasing agent's copy will bear a complete record of the transaction; on one side, the order itself, and on the reverse side full information concerning the receipts, etc. Such a record is valuable for reference purposes and requires no more time or labor than the various other methods.

**Shortage.**—Any shortages or overcharges noted are referred to the Traffic or Claim Department. In







fic or Claim Department, makes the proper notations upon it, and sends it to the Accounting Department.

**Goods Returned for Credit.**—The purchasing agent should devise some simple method of handling matters pertaining to goods returned for credit. There is a possibility of the firm losing money through records of returns not getting on the books and the vender failing to send a credit memorandum. All such instances of defective shipments or goods different from those ordered will naturally come to the notice of the purchasing agent, and he should be the one to make out the necessary papers for their return and see that these papers reach the proper departments.

A 5 by 8 standard form, as per Figure 13, is suggested. It consists of an original and three copies. The original is mailed to the vender to whom the goods are being returned. One copy is kept by the purchasing agent; one is sent to the shipping room; and one is forwarded to the accounting or cost department for proper entry upon the books. After shipment is made, and the shipper's copy filled in, it will be returned to the purchasing agent and affixed to his copy. Both copies are then forwarded to the Accounting Department to show that the matter has been taken care of. The first copy that the Accounting Department receives is in the nature of a warning and serves to put it on its guard. The copy that the purchasing agent temporarily retains will serve for him to make the proper entry upon his record cards, provided the delivery of these goods has been

entered on the record. If the delivery has not been entered there is no need to show that they were returned. For accuracy, however, it is better to enter the goods on the records and note that they were returned. This record will be available at all future times for information, and will show just when and what disposition was made of the article in question. The bookkeeping department would necessarily show an item on this same point, but in all probability would give no information as to what the credit was for. The record, when it shows every detail of every transaction, will serve the purchasing agent in the nature of a guide to a dependable source of supply. Frequent returns to the same vender is an indication that the firm is careless and unreliable in many instances.

**Delivery of Patterns to a Foundry.**—Many purchasing agents pay for and furnish their own patterns of specially designed equipment and supplies, and it is considered advisable to cover this point.

All patterns should be numbered and a card record thereof filed in a cross-index by numbers and names in one, and names and numbers in the other. When goods are sent to the foundry a form similar to Figure 10 will prove of some help. These forms are 5 by 8 standard size, and should be printed "Pattern," or some other suitable heading, for this purpose alone. There should be four copies. One is to go to the foundry with instructions printed to return the pattern—make memo. on the invoice of its return, and show the pattern number thereon. The

second copy is held by the purchasing agent until the return of the pattern. The third copy goes to the shipping clerk and, after shipment is made and noted on this copy, it is returned to the purchasing agent. The fourth copy is held by the receiving clerk and forwarded to the purchasing agent upon the return of the pattern. The completed transaction is filed together *and removed from the live index and filed* in the dead index where it remains.

**Relation of Cost Department to Purchasing Department.**—The committee found, during its investigation, a great deal of variance among different firms in the matter of transmitting the cost of various articles from the purchasing agent to the cost accountant. Two methods which seemed particularly simple and direct were selected by this committee: 1. The first involves the employment of a central stock clerk who has charge of a perpetual inventory, which he keeps accurately. An extra copy of the purchase order should be retained by the purchasing agent in addition to his regular copy, and when the goods arrive he can obtain from the invoice the price, and from the receiving record the quantity, listing both upon the extra copy of the purchasing order, carrying out the total if he prefers. This is forwarded to the central stock clerk, who computes the price of this lot and averages the price on both old and new stock, carrying out the newly found average price in a column for that purpose. All goods taken from stock after the arrival of

new goods are charged at the new average price. For example, if a firm had on hand 100 items at 90 cents and purchased 900 more at \$1, it would have a total of 1,000 costing \$990, or an average price of 99 cents each.

This method of obtaining the average cost has been used successfully with but few discrepancies of total value of stock in the stock rooms as compared with the bookkeeping figures. These discrepancies should be redistributed in the usual way.

In carrying out this plan, instead of the stock clerk obtaining both prices and quantity from the purchasing agent, he obtains the quantity from the receiving record, a copy of which is furnished him, and his prices from the purchasing agent.

2. In the second method the stock clerk does not have anything to do with prices (which are controlled by a cost clerk), but enters the quantity. The quantity is already on the copy of the purchase order forwarded to the cost department and the purchasing agent furnishes the cost clerk with full information as to net price. The cost clerk figures only the unit cost of the last shipment received and does not average his price or consider the price of any stock on hand. This method works in favor of a firm on a rising market. On a declining market a slight loss will ensue until the minimum is used up and all goods will figure on a basis of the last cost, until a new set of figures for new shipment is obtained. When goods are used with fair



regularity, this method has certain advantages, but if shipments are received only two or three times a year, it would be well, in using this method, to write once a month (or at other regular periods), and obtain the latest price from the vender.



## APPENDIX

### NOTES ON THE TESTING OF MATERIALS

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To the purchasing agent the subject of testing materials is of such fundamental importance as to justify a brief discussion of the theory upon which it is based and to outline its purpose and ultimate aim.

To determine the value of any material for a given purpose its properties must be measurable. These properties may have limiting values which must be regarded or the material may prove worthless, costly, or even harmful for the purpose intended. The testing of materials may prove a needless waste of time and money, unless due consideration has been given to the nature of the test to be applied, the conditions under which they are to be made, and the interpretation of results. It includes measurements of both quantity and quality.

The testing of materials serves two important and distinct purposes; first, to ascertain whether or not they comply with specifications, and second, to add to the general fund of knowledge regarding them.

Materials may be classified in many different ways, for example; chemically, physically, according to their technical applications, and likewise by any other aspect selected as criterion. Classification according to the use of the materials is especially significant, since the testing of materials is primarily done with a view to their efficient

use. Materials are grouped according to their use, for example: electrical materials, lubricants, illuminants, colorants, abrasives, and many others. The materials possess properties useful for a specialized purpose. An important group, based upon use is "structural materials," such as metals, stone, cement, sand, brick, terra cotta, wood, protective coatings, paints, etc. Structural materials have for their practical function to maintain predetermined space relations of the parts of the structure under service conditions, and to protect the structure from the action of unfavorable agencies.

Another group includes materials in which pliability or flexibility is a desirable quality. This class includes textiles, paper, rubber, leather, and similar materials.

Another group consists of materials which form the surface upon other materials by adhesion or absorption. This group includes protective coatings, such as metallic coatings and paints, inks, stains and dyes, oils and varnishes.

The utility of materials depends upon the nature, magnitude and stability of their properties.

The economic value of any given property depends upon its relative effect upon the net efficiency of the material for a given purpose. Quality is that which fits a material for a given use. The material is not simply good, it is good for a certain purpose, and the word "quality" is meaningless apart from the use in view. Good quality means good for a definite use. The test of the material is to determine how good for that use. Too much stress cannot be laid upon the economic value of testing for quality of materials before their use.

The time has passed when the strength of materials can be left to guesswork or to intelligent opinion alone. Materi-



als must be guaranteed by specification and test. While the testing of materials in the modern sense is now a most important factor in the industries, such testing is still in its initial stage with respect to the establishment of rigorous standards of quality. A specification is in a sense a working standard of quality and indicates the quality desired and the conditions needed to insure it. A specification is too often not the real standard of quality at all. It may be narrow and exclude efficient material or so loose as to admit material of poor quality. A specification, too, may require tests which do not gauge any desirable property and yet omit tests of vital importance. Defect may be due to lack of knowledge or, too often, to an effort merely to duplicate material once found satisfactory. This is done by describing a special brand and adding the words "or equal," or by minutely describing the properties of the acceptable brand. Both methods are used in place of specifying the use required of the material—a practical recourse where a definite standard is still impracticable. Defective specifications, whether due to compromise of quality for economy or through lack of data should be replaced by those in which the best magnitude of each property involved is so specified as to predetermine the definite quality best meeting the need. The quality specification should be just as definite to suit the conditions of use which it must meet. Each essential requirement, whether of size or quality, must be correct within certain limits or the article is unsatisfactory or useless for the purpose. An ideal specification for material regards both economy and efficiency and does not ignore depreciation, replacement, repair, and service.

The basis of specifications should be made the subject of

constant study by the purchasing agent, and changes should be made as soon as new technical knowledge necessitates.

Inflexible specifications retard technical progress, but if allowed to advance apace with new technical knowledge, the specification becomes a distinct aid to such progress.

The purchasing agent should select such tests which suffice to show with commercial accuracy the fitness of the material for the purpose in view. Economy dictates this limitation since in many cases the time and labor needed for more elaborate tests would make them prohibitive, and nullify the economic value of such testing. As far as practical the testing laboratory selected to perform the tests should be given all the facts with respect to the material sent for test and the use for which it is intended. Otherwise a test cannot be well planned and the user may be unable to correctly interpret the report of the test. An incorrect method of selecting test samples may entirely vitiate a test as a measure of the quality of a given material. The best manufacturers aim to keep their product within an acceptable range of quality. A single test piece seldom shows the average quality of the material as a whole. If the test is designed to determine the average quality, sample test pieces should be taken from the various parts of the product.

Again, the properties of the material sometimes change on exposure to light, air, moisture, or other agencies. If the samples are not properly protected, they may cease to be typical. In some cases, sampling of material is done directly by the testing laboratory, in other cases, samples are submitted directly by the purchasing agent. Samples which are liable to change upon exposure should be protected in such a manner as to insure constancy until the test

is made. All samples should be protected from all sources of contamination. If the test is to check compliance with specifications, a copy of the specifications should accompany the request. It is particularly important that details be given as to the source, brand, and use of the material—data which modify the test selected to ascertain the fitness of the material for a specified use.

### *Classes of Materials*

#### 1. Metals

##### A. Metals and Metal Products

###### (1) *Definition:*

Metals and metal products include the elementary metals; first, ferrous alloys, including all kinds of steel; nonferrous alloys, including bronzes, brasses, compositions, special alloys, etc.; together with manufactured material or devices made from these, such as plated metals, enameled ware, chains, cables, springs, steel rails, etc.

###### (2) *Purpose of Tests*

- (a) Determinations of the quality or properties.
- (b) Acceptance or rejection of materials bought under contract, which are to fulfill certain specifications.
- (c) To ascertain the causes of failure in metal products or structures.

###### (3) *Nature of Tests*

- (a) Chemical analysis,
- (b) Metallographic examination and heat treatment.
- (c) Mechanical tests.
- (d) Miscellaneous tests of physical properties.

(4) *Sampling*

Correct sampling is of utmost importance; the purchasing agent should abide by the instructions ordinarily furnished by the testing laboratory selected to perform the tests; drillings sent for chemical analysis should be free from oil, slag, moisture, dirt, or other contaminations.

## B. Composite Metal Products

(1) *Definition:*

Composite metal products form a class of metal products which is composed of two or more materials, for example, plated, enameled, and case-hardened metals. Plated or coated metals include roofing terneplate, "bright tin," galvanized iron, etc. They all consist of an alloy or a single metal applied to a steel or iron base called "black plate." The coating or terneplate consists of an alloy of lead and tin: That on bright tin plate is pure tin, and that on galvanized metal is zinc applied to the black plate. Terneplate and galvanized iron are used in general building construction, while bright tin is used in the canning industry and for cooking and domestic utensils. The coating should be adherent and continuous, free from pinholes and imperfections and the base and coating should stand the required bending and distortion necessary to make proper joints and seams without fracture, or separation of coating from base. Enameled iron and enameled steel are produced by thoroughly cleaning the sur-



face and applying a coating of thin paste, (slush or ground coat), which consists of a fairly basic mixture of borosilicates. After heating and fusion of this layer a second, more glassy coating is dusted on, which after a second heating, forms the enamel proper.

(2) *Purpose of Tests*

Purpose of tests are the same as for "Metals and Metal Products."

(3) *Nature of Tests*

(a) Chemical analysis.

(b) Determination of weight per unit area.

(c) Bending tests.

(d) Miscellaneous tests of physical properties, e. g., resistance to the action of dilute acids, resistance to certain heating and cooling, and good adhesion to the metal and the conditions of impact.

## 2. Hydraulic Cements and Concrete

### A. Portland Cement

(1) *Definition:*

The most common type of hydraulic cement is known as Portland Cement, which may be defined as the product obtained by finely pulverizing clinker produced by calcining to incipient fusion an intimate mixture of properly proportioned argillaceous and calcareous substances, with only such additions subsequent to calcining as may be necessary to control setting properties. Such addition should not exceed three per cent of the calcined product. Portland Cement is essentially a mixture of lime, silica, alumina, and iron oxide. There is perhaps no structural material sus-

ceptible of a greater variety of uses than cement. This is due to the fact that it is handled and placed as a plastic material; it obtains great strength in a comparatively short period of time; it is of constant volume and relatively permanent, and is almost universally available. The more important properties of cement are its strength as a binding medium and its durability. A normal American Portland Cement which meets the standard specifications for soundness, setting time, and tensile strength, has an approximate composition within the following limits:

	Per cent
Silica .....	19 to 25
Alumina .....	5 to 9
Iron oxide .....	2 to 4
Lime .....	60 to 64
Magnesia .....	1 to 5
Sulphuric anhydride .....	0.5 to 2
Insoluble residue .....	0.1 to 1

The composition of normal Portland Cement has been the subject of a great deal of investigation, and it can be said that the quantities of silica, alumina, iron oxide, lime, magnesia, and sulphuric anhydride can vary within fairly wide limits without materially affecting the quality of the material.

(2) *Purpose of Tests*

The purpose of tests is to determine the compliance of the cement to the specifications approved by the American Society of Testing Materials.

(3) *Nature of Tests*

(a) *Chemical Analysis.*

The analysis of a cement will show the uniformity in composition of the product from individual mills. As the present standard specifications limit the sulphuric anhydride to two per cent and the magnesia to five per cent, chemical analysis should be made for record on every sample.

(b) *Physical Tests*

The physical tests most frequently made to determine the quality, in the order of their importance, are: soundness, time of setting, tensile strength, fineness and specific gravity. The purpose of the soundness test is to detect those qualities in a cement which tend to destroy the strength and durability. The determination of the time when the plasticity of the mixture ceases or the "initial set" is obtained is very important, for the subsequent disturbance of the material may cause a loss of strength. A knowledge of the time required for "final set" is also of importance, especially if the cement is to be used in marine construction. The tensile strength test is a direct measurement of the cohesive strength of the material and is important in view of the fact that a cement may meet the requirements of all the other tests and yet have very little cementing value. Only the extremely fine powder of cement called

“flour” possesses appreciable cementing qualities and the coarser particles are practically inert, adding little to the cementing value for several weeks or months after mixing with water. No sieve is fine enough to determine the flour in cement, nor is there any other means of accurately and practically measuring the flour. Some cements grind easier than others; first, although a larger percentage of one cement may pass the 200-mesh sieve than another, the former may have a smaller percentage of actual flour due to the difference in the hardness and the character of the clinker and the method used in grinding. The specific gravity of a Portland Cement is not an indication of its cementing value. It will vary with the constituents of the cement, especially with the content of iron oxide.

(4) *Sampling*

The samples of cement should be so taken as to fairly represent the material. The sampling is ordinarily left to the laboratory selected to make the chemical and the physical tests.

B. *White Cement*

Most of the white cements now manufactured are white Portland Cements, as they are manufactured in the same manner, and possess practically all of the properties of the Portland Cement. The light color is due to the absence of iron in the



composition, which is controlled by using raw materials free from iron in its manufacture. It is necessary in most cases to use White Cement if pigments are to be added for tinting, as the normal Portland Cement is gray and clear colors cannot be obtained with it. The same tests are applied to White Cement as are applied to Portland Cement.

### C. Sand and Stone Screenings

Natural sand may be defined as the fine particles of natural water-worn stone or other mineral material. Stone screenings is essentially an artificial sand. The best grade of sand is composed chiefly of inert siliceous material. The finer grades of plastering and building sand are usually beach or pit sand. Stone screenings may be obtained from any kind of stone and is the product received from the stone crusher which passes the  $\frac{1}{4}$ -inch mesh sieve. Sand is graded according to the uses for which it is intended. For fine plaster work the sand practically all passes a 20 or 30-mesh sieve, for mortar it all passes a 10-mesh sieve, and for use as fine concrete aggregate it all passes a  $\frac{1}{4}$ -inch mesh sieve. Stone screenings are used primarily in the construction of roads and as fine concrete aggregate. Sand varies in chemical composition, size of grain, sharpness, porosity, hardness and cleanliness. Stone screenings will vary in chemical composition, shape of particles, porosity, hardness, strength and cleanliness or freedom from dust. A knowledge of the chemical composition of sand or stone screenings to be used for building purposes is of little or no value.

The particles of sand or stone should be graded so as not to be of uniform size to give maximum density in water or concrete. The hardness of sand and stone screenings is of importance if the material is to be exposed to abrasion, as in roads, concrete floors, walks, etc. An apparently good sand is at times found to give very poor results in a mortar or concrete. This is found to be due in many cases to the presence of loamy clay, organic, or mineral matter, which coats the particles and prevents adhesion of the binding medium. The following tests on sand and stone screenings are ordinarily conducted; the weight per cubic foot and percentage of voids; granulometric analysis; determinations of the percentage of silt, which is usually the deleterious material; determination of tensile and compressive strength as compared with the standard sand; chemical determination of the presence of organic matter, soluble alkalis, etc.

### 3. Ceramics

#### A. Clays and Shales

Clays are mixtures of minerals or rocks in which hydrous silicate of alumina is present in sufficient amount to impart its characteristics to the mass to a reasonable degree. Shales are hardened clays, possessing a more or less well-defined cleavage. The main properties with which the user of clays is concerned are: plasticity and working quality, bonding power, drying shrinkage and behavior, burning shrinkage, vitrification range, color and fusibility. Note must also be taken of the presence of impurities like carbon, gypsum, pyrites, etc.

## B. Clay Products

Clay Building Brick includes both common and face brick, as well as blocks and various shapes employed in brick work. The term "Architectural terra cotta" covers decorated hollow blocks of a fire clay body and pressed in plastic molds. These may be used with a glazed or unglazed surface. Clay roofing tiles are usually manufactured without a glazed surface, though increasing use is now being made of glazed products. Ceramic Floor Tiles are produced from mixed or natural bodies burned to vitrification. Glazed wall tiles are ceramic tiles covered with a bright glaze and used for the facing of walls. Paving Blocks and Bricks consist of vitrified shale or fire clay and are used for the surfacing of streets. Specifications offered by the National Paving Brick Manufacturers Association should be followed in every detail. Sewer Pipe is usually made from shale or fire clay, rarely from surface clay; ordinary hard-burned and provided with salt glaze. In products of this kind no evidence of excessive lamination or of an over burned, vesicular structure must be present. Any pipe showing black covering should be rejected. The walls of the pipes should be straight and uniformly glazed. No unglazed surface, cracks, blisters or other defects must be observed. When struck with a hammer the pipe must give a clear ring. Drain Tiles are pipes consisting of burned clay, usually unglazed. They are usually made of red burning clay or shale. The tiles should be well burned, straight without cracks and should be cut off square at the ends. Porcelain

and White Ware are ceramic products manufactured from white burning mixtures of kaolin, ball clay, feldspar and flint; when burned to the state of translucent vitrification, may be called porcelain. Similar mixtures not carried to complete vitrification are known as white ware or earthen ware bodies. A great variety of products may be included under this heading, of which three groups are especially prominent: white pottery, known as porcelain, china, semiporcelain, white ware, etc., white sanitary ware, and electrical porcelain. Fireproofing for steel protection is ordinarily a clay fireproofing consisting of porous tiles shaped to adapt themselves to steel girders, beams and columns. The term "refractories" covers all the materials used to resist high temperatures.

#### 4. Lime

##### A. Burned Lime

Lime consists essentially of calcium oxide or of calcium and magnesium oxides. It may be defined as the product obtained when limestone, marble, dolomite, or similar calcareous material is calcined at a temperature below the sintering point, provided that such product will slake when treated with water. The important properties of lime are: sand-carrying capacity, good crushing and good tensile strength of 1:3 mortar when ninety days old. The lime should be well burned, of good color, plastic, and free from material which will not slake.

##### B. Hydrated Lime

Hydrated Lime is a dry, flocculent powder which is prepared by slaking lime with an amount of



water insufficient to form a paste, but enough to combine with the calcium oxide present. Hydrated lime should have the same properties as the lump lime in place of which it is to be used. In addition it should contain no free calcium oxide, and, when used for certain purposes the fineness of the material is important.

### C. Sand-Lime Brick

Sand-Lime Brick consists essentially of sand which is bound together by hydrated calcium silicate formed by the action of lime on sand under the influence of steam. The distinguishing property of sand-lime brick is its color, which should normally be nearly white, and should be readily susceptible of change by the addition of various pigments. It should be comparable with common clay brick in regard to crushing and transverse strengths. The quantity of water it can absorb is important, and also the crushing strength when it is wet.

### 5. Stone

Structural or building stones are of several types and of considerable variety. Since stones are usually called upon to withstand great pressures and are exposed to the elements, the important physical points to be considered by the buyer are strength and resistance to weathering. Stones of the same class vary greatly in texture and color, so that the selection of the stones should depend upon the service exacted.

### 6. Paint Materials

This class includes dry pigments, pigments ground in oil and in japan, ready-mixed paints, water colors, tinting colors, enamels, stains, paint oils, volatile thinners, driers, oil and spirit varnishes, etc. Paints

and varnishes are the finished products; the others are paint materials used to produce the finished product; pigments should be finely ground, they should furnish a permanent, opaque surface of the shade or hue desired; they should not chalk, check or crack, nor discolor when exposed to normal conditions of exposure, and should have no corroding action on the surfaces protected, and the dry paint film should be as impervious as possible to moisture, air, and gases. Many single pigments do not have all these requisite characteristics; some have high tinting power but lack in opacity or optical covering power; others have a tendency to chalk or peel when used alone; others have such strong coloring strength that they can be blended with cheaper pigments without any sacrifice of quality. Purity is not necessarily synonymous with quality. On these accounts the best results are frequently obtained by proper blending of pigments. Linseed oil is the chief drying oil. It absorbs oxygen from the air and changes it from a liquid to a solid, leatherlike substance which holds the pigments to the surface. Other oils, such as tung oil (Chinese wood oil), soya-bean oil, fish oil, etc., have this property of absorbing oxygen to a greater or lesser degree and may furnish a satisfactory substitute for linseed oils. By heating these oils with metallic salts, especially compounds of lead and manganese, boiled oils are produced, the drying action of which is considerably increased.

Driers are usually compounds of lead or manganese and linseed oil, rosin, or other gum resins.

Volatile thinners are usually turpentine or a volatile petroleum product. Turpentine obtained from

the sap is called "gum spirits," while the turpentine obtained from the wood or stumps is called "wood" or "stump" turpentine. The petroleum products should be completely volatile at ordinary temperatures, but they should not volatilize so rapidly as to prevent a proper flowing out of the brush marks.

Varnishes are sold under a great variety of names offered for a variety of uses. These differ in many cases only in name. For general use, interior, exterior, rubbing, and floor varnishes, will meet the usual demands of service.

#### 7. Inks

The only inks which can be relied upon as sufficiently permanent for records are those containing finely divided carbon (India ink) and those in which iron gallotannate is the chief coloring matter. To the iron gallotannate an organic dye is added because the fresh writing would otherwise be too pale. Some writing inks and most of the ink powders are made solely of dyes. The nigrosine dyes make ink of quite satisfactory intensity of color, but should never be relied upon for permanent records. Colored inks are generally made by dissolving the so-called aniline dyes, either in pure water or with various additions. Most of these are readily destroyed by sunlight, water, and various chemical reagents, and they should not be used for permanent records. The formation of sediment or the growth of mould when the ink is kept in an open vessel for a week in a place free from dust, indicates a poor quality of ink.

#### 8. Paper

In order that the user may more correctly judge the quality of paper and determine its usefulness for

the purpose intended, he should be informed by the seller upon the following points: the fiber composition, tensile strength, folding endurance, thickness, weight per standard ream, and per cent filler retained in the paper.

#### 9. Textiles

Textile material includes all spun or woven fabrics or fibers suitable for spinning or weaving. Textile fibers have a wide range of uses. Among the properties which the fibers should possess are: fineness, length, strength, and flexibility. Yarns should have good weaving and dyeing qualities; minimum slipping in the fabric and high luster are often desirable. Fabrics should be well woven and finished with even and straight selvages, a minimum of spots and blemishes, and uniformity as to color and strength.

#### 10. Rubber

Crude rubber is obtained by coagulating and drying the milky latex derived from certain trees and plants. The quality of the crude rubber which determines its market value depends not merely upon the species of plant from which the latex has been secured but also upon the locality in which it is grown, and in a great measure upon the methods followed in its correction, coagulation, and drying. The best rubber comes from the Amazon basin. The term "rubber," as commonly employed, does not refer to the commercially pure gum, but to a vulcanized compound which consists of gum, mineral matter or pigments, and sulphur. Mineral matter (filler) serves a very useful purpose in adding desirable properties



which could not otherwise be obtained. Their presence, therefore, should not be looked upon as adulteration. The real value of rubber in any case depends upon the length of time that it will retain those properties which are desirable.



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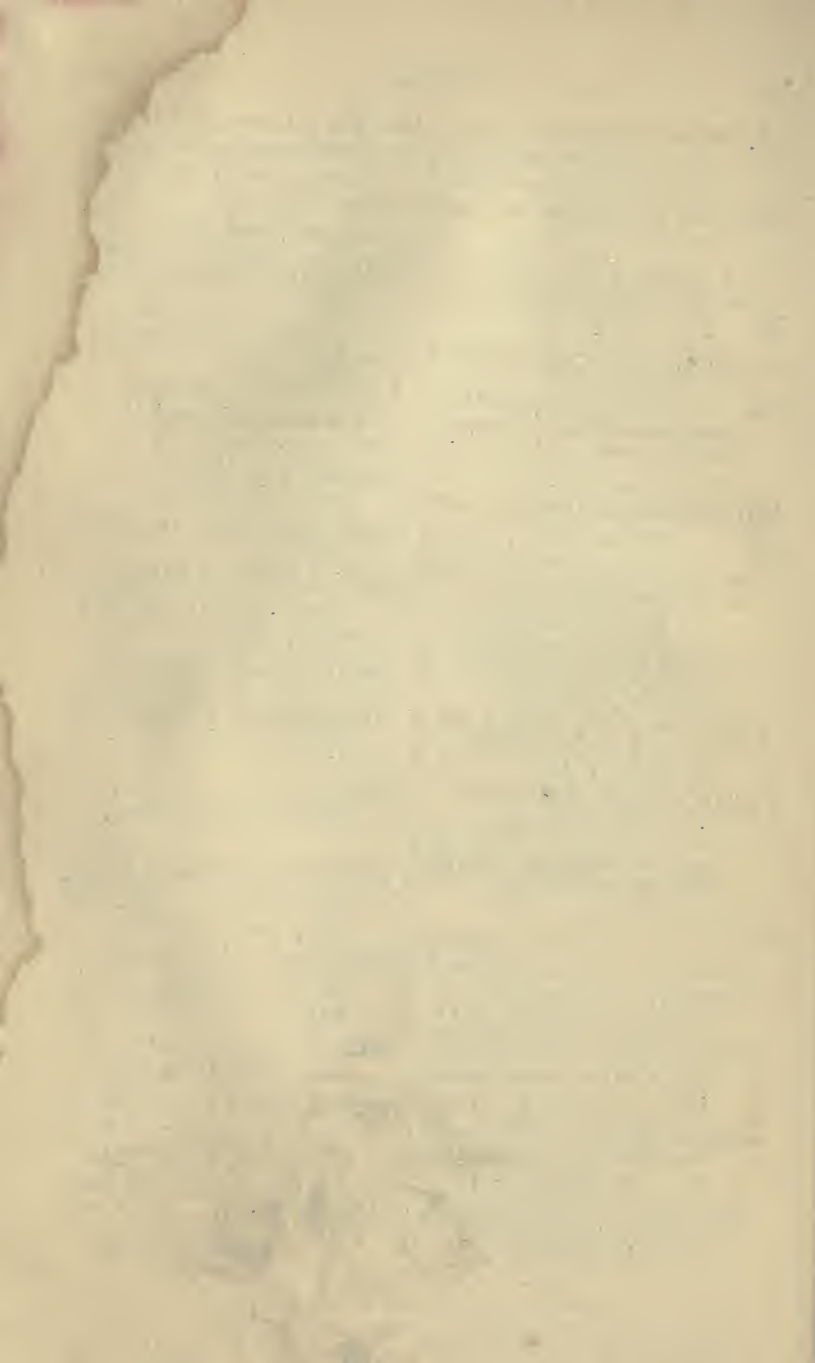
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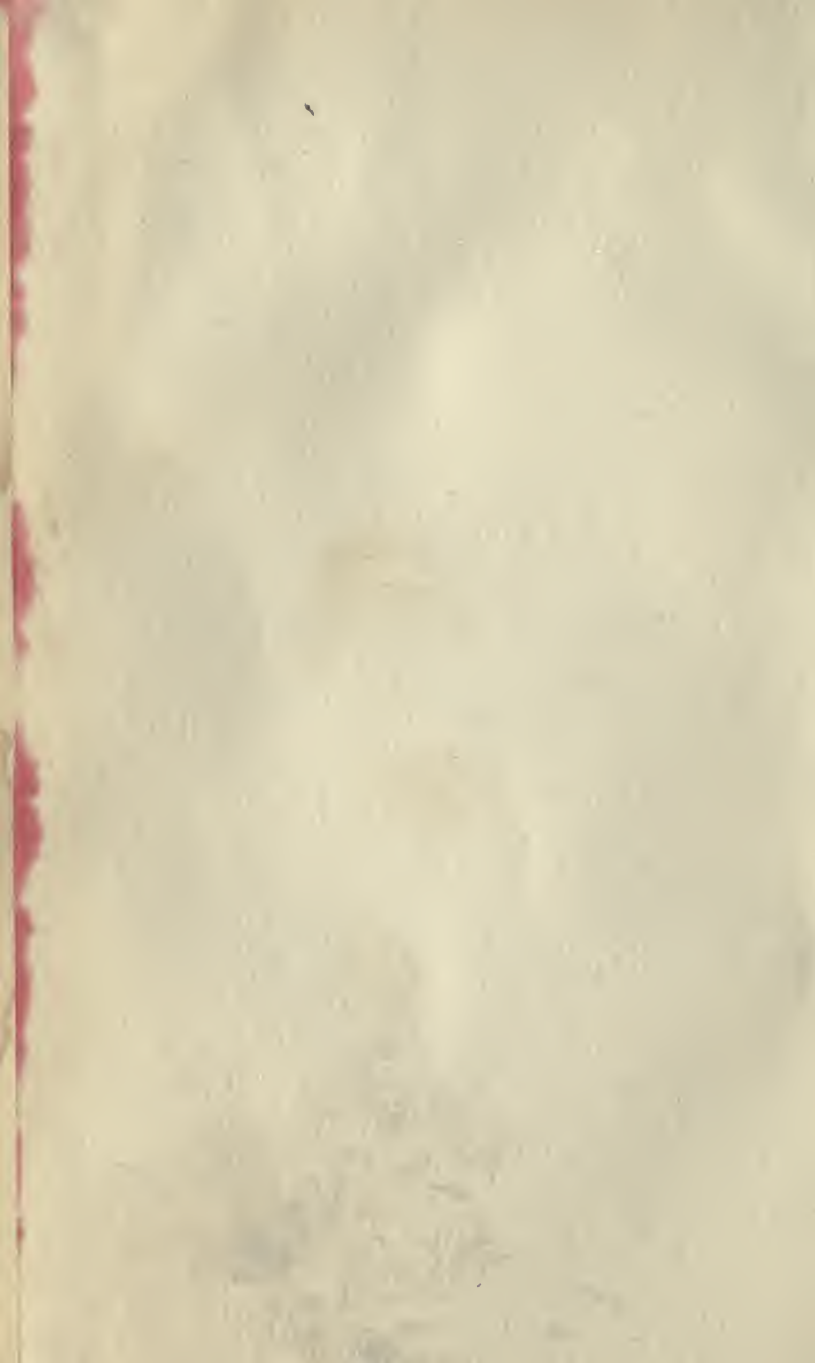
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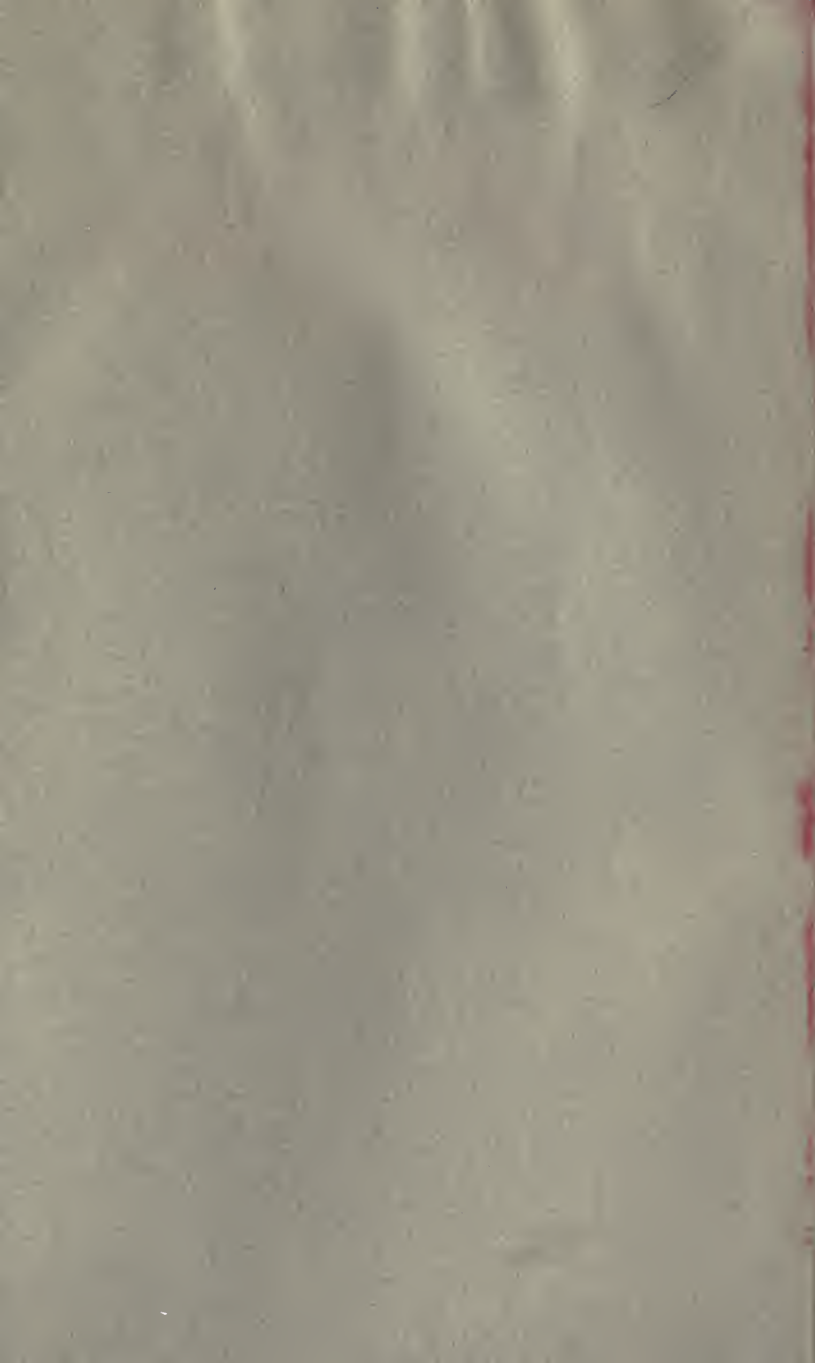
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